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THE

AMERICAN VEGETABLE PRACTICE,

OR A

NEW AND IMPROVED

GUIDE TO HEALTH,

DESIGNED

FOR THE USE OF FAMILIES.

IN SIX PARTS.

Part I. Concise View of the Human Body, with engraved and wood-cut illustrations. Part II. Glance at the Old School Practice of Physic. Part III. Vegetable Materia Medica, with colored illustrations. Part IV. Compounds. Part V. Practice of Medicine, based upon what are deemed correct Physiological and Pathological Principles. Part VI. Guide for Women, containing a simplified treatise on Childbirth, with a description of the Diseases peculiar to Females and Infants.

BY MORRIS MATTSON,

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Do not counteract the living principle.—*Napoleon.*

"It is contrary to the dictates of common sense, to suppose that a POISON, either *mineral* or *vegetable*, can be a MEDICINE."

IN TWO VOLUMES.

VOL. I.

BOSTON:

PUBLISHED BY DANIEL L. HALE,

Blackstone St....Seven doors W. of Hanover St.

1841.

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TO THE AMERICAN READER.

In the summer of 1837, during my residence in Philadelphia, I announced a *Vegetable Materia Medica* for publication, which led to a proposal from Dr. Samuel Thomson of Boston, who was favorably known as a reformer in the healing art, to assist him in preparing for the press a new and final edition of his Guide to Health, connecting with it my own work on materia medica. I gave the matter a careful and deliberate consideration—as many of my friends were unwilling that I should form any connexion with Dr. Thomson—and in March, 1838, after repeated and urgent solicitations, made him a visit in Boston. I found him illiterate, coarse in his manners, and extremely selfish, and becoming disgusted with the man, was about to return to Philadelphia ; but his friends urged me to remain, and enter into a contract with him, if possible, representing to me the necessity of having a work on the reformed or vegetable practice which would meet with the approbation of an intelligent community. Accordingly, in about three weeks, a contract was signed, sealed, and delivered, and it was agreed between us that I was to revise and prepare Dr. Thomson's Guide for publication, in a new form, introducing such observations on surgery and midwifery as I might deem proper and useful, and to embrace in said publication my work on materia medica, with colored illustrations of plants. The new publication was to be sold at ten dollars a copy, retail, instead of twenty dollars, which Dr. Thomson had exacted for his old and very imperfect work. A committee of four persons was

appointed in the contract, to decide "all matters and things in relation to the character, form, and contents of said work, as also the style and manner of its publication." The gentlemen composing the committee, I may remark, were selected by Dr. Thomson himself, as his personal, warm, and long-tried friends, and though they were strangers to me, I did not object to their appointment.

Matters being thus adjusted, I interrogated Dr. Thomson from time to time, as critically as possible, with regard to his knowledge of remedies, and of the principles and practice of medicine, taking down his answers in writing. I was thus prepared to render the new work as complete as possible, so far as his views or opinions were concerned, and in June, 1840, it was ready for the press. Dr. Thomson, however, would not allow the committee to examine it, and used every effort in his power to prevent its publication, employing an attorney to assist him in breaking the contract which he had so anxiously and solemnly ratified. Not satisfied with this, he devised a plan to wrest the manuscript from my hands, and publish it for his own benefit, intending thereby to deprive me of my stipulated share of the profit. In this, however, he was disappointed, and justice triumphed over intrigue and avarice.

About this period, I was invited to attend a convention of the Maine Thomsonian Medical Society; and in accordance with a request made by that body, gave a full and impartial account of Dr. Thomson's recent transactions. The members of the convention expressed their disapprobation of his unwarrantable conduct, and passed a unanimous resolution advising me to publish the work in my own name, pledging themselves to use their influence in promoting its sale throughout the state of Maine and British provinces.

In addition to the kindness manifested toward me by the friends of medical reform in Maine, I received letters from almost every part of the United States, urging me to put the work to press without delay, and in obedience to these pressing solicitations, I announced it for publication. Dr. Thomson now offered to remunerate me, if I would promise to forego my intentions and give up to him my manuscript, but finding this of no avail, he declared he would thwart me in my plans, though it should cost him half his fortune. I pursued the even tenor of my way,

however, regardless, altogether, of his vain threats, or idle boasting. In the course of two or three months, he saw the dilemma into which he had rashly precipitated himself, and sent a message, through one of his friends, that he was willing to join me in the publication of the work, according to the stipulations of the contract which he had so shamefully violated. I wished no further connexion with Dr. Thomson, however, and thus the matter terminated.

My book was put to press in January last, and since that time I have re-written every page of the manuscript, making many valuable additions, and using every effort in my power to render it acceptable to an intelligent public. The celebrated Dr. Rush advised his pupils to lay every person with whom they met, whether in a packet boat, stage wagon, or on a public road, under contribution for facts in relation to medicine ; and in the same spirit have I endeavored to derive useful information from every possible source, however humble or uninviting it may have been. During a residence of nearly two years under the same roof with Dr. Thomson, an opportunity was afforded me, among the numerous patients who were constantly under treatment, of observing the effects of innocent vegetable remedies in the removal of disease, and whatever knowledge of a useful character was acquired during that period, I have considered it my privilege to embody in the pages of this work. I wish it to be understood, however, that I do not approve of every feature in Dr. Thomson's practice, and have only adopted his views where they were in consonance with reason and philosophy. I will mention a case or two by way of illustration. Mr. William A. Parker of Boston, a highly respectable citizen, was under treatment for two or three years by the medical faculty, who left him with a troublesome ulcer on his left breast. Finally, he placed himself under the care of Dr. Thomson, who administered several courses of medicine, and previous to each course, applied a poultice to the ulcer, composed of slippery elm, bayberry, lobelia, and cayenne, the latter being sprinkled in a thick layer upon the surface of the poultice. This painful and highly injudicious application was intended, according to Dr. Thomson's own explanation, to drive the ulcer into the internal organs, so that, when vomiting ensued, it might be effectually banished from the system. Notwithstanding the

cayenne and lobelia poultices, however, the ulcer still continued, and Mr. Parker was not cured until he made application to an old woman who had some reputation in the treatment of sores. She had sagacity enough to discover that the ulcer extended for some distance beneath the surface, and by using injections of some appropriate fluid to cleanse the cavity, very soon effected a permanent cure. It is with regret that I feel myself called upon to notice such a manifestation of ignorance on the part of Dr. Thomson, particularly when he has been the propagator of much that is truly valuable in the healing art. The most acute and discerning minds, however, are sometimes led away by vain and foolish notions. The illustrious Dr. Johnson, notwithstanding his towering intellect and brilliant literary acquirements, was weak enough to suppose that the *touch* of Queen Anne could cure him of the scrofula. Even the medical faculty, who are supposed by some people to be incapable of doing wrong, recommend the *wood-louse* as a remedy in dropsy and asthma, and *spiders* in the treatment of ague and fever.

I will mention another case, to show that Dr. Thomson does not exercise sufficient discernment in the treatment of some diseases, whatever his advocates may say to the contrary. A gentleman, who was accustomed to the free use of wine, called at my office, leaning upon the arm of a friend, complaining of severe indisposition. I saw at once that he was threatened with an attack of delirium tremens, and upon inquiry found that he had not tasted his accustomed beverage for two or three days. His eyes had a glaring expression, and his whole body was tremulous. I accompanied him without delay to Dr. Thomson's infirmary, and administered some medicine, which relieved the urgent symptoms. I then expressed a desire that he should have a course of medicine, commencing with small doses of lobelia ; but Dr. Thomson asserted that it would be improper to administer a course under five or six days, as the lobelia would increase his delirium in a tenfold degree. Such was not my experience, however, for I had always found lobelia to be a sovereign remedy in delirium tremens, but I could not act in opposition to Dr. Thomson's orders, in his own infirmary. A day passed without the patient experiencing much if any relief, and as he had placed himself originally under my care, I insisted upon the administration of a course, telling Dr. Thomson that I would assume the responsibility. Accordingly, a

course was commenced, and in less than half an hour from the time the lobelia was given, the patient sunk into a quiet and refreshing sleep, and when he awoke, which was in about two hours, he vomited slightly, and was entirely relieved of his malady. I do not mention this case with a view of reflecting discredit upon Dr. Thomson, but merely to convince the reader that he does not, in every instance, possess that degree of oracular wisdom which some of his enthusiastic advocates seem to imagine. No one is more ready than myself to do him full justice for all his discoveries, but I am not willing to acknowledge that he has originated a perfect system of medical practice.

Dr. Thomson has accused me of having made an undue appropriation of his discoveries and doctrines, in the preparation of this work, and I feel myself called upon to reply to the charge. In the first place, I must be permitted to observe, that his Guide to Health contains many errors and fallacies which I could not have adopted or sanctioned without rendering myself ridiculous in the estimation of the intelligent reader. I will quote a few random passages from the work, to substantiate the truth of my remark.

1. On page 116, he says, "The gall-bladder grows on the liver, and is placed between that and the stomach, so that when the latter is filled with food, the bile is discharged into the stomach to digest it." Perhaps I need not remark that the bile is not emptied into the stomach at all, and has nothing to do with the digestion of food in the stomach; it is emptied into the duodenum, several inches distant from the stomach, and there performs the office which nature assigned it, of separating the nutritious from the innutritious portions of food. Bile is sometimes found in the stomach, but it is always in a diseased or morbid condition of the organ, and makes its way there only by an inverted action of the duodenum.

2. On page 150, Dr. Thomson conveys the idea that in "breathing," oxygen is exhaled or given out from the lungs, whereas, so far as any thing is known upon the subject, the oxygen is absorbed by the lungs, and carbonic acid gas is evolved. It is difficult to know, however, what precise meaning to attach to his words, for by referring to pages 149-50 of his Guide,

it will be seen that he speaks of *oxygen*, *water*, and *vapor*, as *synonymous*.

3. Dr. Thomson says there are two kinds of dropsy—page 122 of the Guide—one of which is "caused by cold and obstruction;" and that "a leak forms in the glands and lets the water into the trunk of the body, where there is no vent to let it off." Dr. T. ridicules the idea of studying anatomy and physiology, but had he been acquainted with these subjects, he would have known that the fluid which collects in the "trunk of the body" in dropsy, is not a glandular secretion, but an exhalation from the serous membranes, which is not carried off with sufficient rapidity by the absorbents, and hence the accumulation of fluid constituting dropsy.

4. In his remarks on fevers, pages 17 and 18 of the Guide, he says, "*When the outward heat becomes equal with the inward, either by the one being raised, or the other being lowered, cold assumes the power, and death takes place.*"

I once enquired of Dr. Thomson what was to be understood by the terms "inward heat" and "outward heat," and he informed me that the first implied the heat of the body or temperature of the blood, and the second the atmosphere, or surrounding medium. Were this doctrine correct, we should all perish by exposure to the sun, in the hot weather of summer, the moment the thermometer should rise to 98 or 100 degrees of Fahrenheit, for that is the healthy temperature of the blood. Under these circumstances, there would be, according to Dr. Thomson, a "balance between the inward and outward heat," and we should die upon the instant. Nor could we venture into the vapor bath, without the sacrifice of our lives, for we seldom employ it at a lower temperature than 110 degrees. The Finlanders go into their vapor baths at a temperature of 150 degrees, remaining there for half an hour or an hour; and we have an account of Dr. Fordyce, and others, who went into an oven heated to a temperature of 260 degrees, and yet death did not occur, as Dr. Thomson would lead us to expect. From experiments made by Boerhaave, it was believed, for a time, says Mr. Bell, in his Anatomy and Physiology, that persons could not live when exposed to a heat greater than that which is natural to the body; but this was disproved by some young women in the employ of a baker at Rochefoucault, who were in the habit of going into the heated ovens

at the temperature of 278 degrees; and they could remain in them for about twelve minutes. Dr. Thomson, therefore, has been ignorantly promulgating the error of a by-gone age, and it is not to be supposed that I have followed him in any of his erroneous doctrines or speculations.

I agree with Dr. T. however, with regard to the use of African cayenne as a stimulant; lobelia inflata as a safe and efficient emetic; and so of many other remedies which he has introduced to the public. Many of his compounds, also, are of inestimable value, and will no doubt transmit his name to posterity. In truth, there is no man in the country who has labored more effectually in the cause of medical reform than Dr. Thomson; and notwithstanding his ignorance, he has been a prominent instrument in accomplishing a mighty revolution in the healing art. He seems to have verified that passage of Scripture which says, "But God hath chosen the foolish things of the world to confound the wise; and God hath chosen the weak things of the world to confound the things which are mighty." Far be it from me, therefore, to pluck a single laurel from his brow, for as a successful medical reformer he is entitled to respect, whatever may be the frailties and imperfections of his character; and while I seek to unveil his errors, I shall ever accord to him the meed of praise for his useful discoveries.

Dr. Thomson, however, as I conceive, is chiefly entitled to credit for having made himself acquainted with remedies in popular use, either in this or some other country, and introducing them to the public in a connected form. His actual discoveries seem to have been extremely limited. For example, the vapor bath has been employed by Europeans for several centuries; and cayenne pepper is one of the oldest remedies in the materia medica. The lobelia inflata, also, was used by the people of New England as an emetic, before he was born, notwithstanding he claims to have been the discoverer of its medical properties. I have mentioned some facts in proof of this assertion, in my description of the plant, and have many more at my disposal, which I intend to give to the public in a small volume. Indeed, there is scarcely a plant mentioned by Dr. Thomson, in his Guide, which has not been familiar with the New England people for at least a century. What is technically termed a *course of medicine*, is supposed to have been original with Dr. Thom-

son, though the idea even of this seems to have been borrowed. In my remarks on the vapor bath, I have shown that the American aborigines employed this agent, together with catnip tea, in the cure of their diseases, long before Dr. T. was known as a medical reformer, or at all events, before his name had reached beyond the borders of civilization. "Of all Turkish remedies," says Dr. Madden, "the vapor bath is the first and most efficacious in rheumatic and cuticular diseases." Mungo Park, in allusion to the Mandingoes, says, "On the first attack of a fever, when the patient complains of cold, he is frequently placed in a sort of vapor bath, which commonly produces a profuse perspiration, and wonderfully relieves the sufferer." Since this book was put to press, I have ascertained that the medical practice of the Marshpee Indians, the remnant of whom are now to be found at Martha's Vineyard, Massachusetts, is closely analogous to that of Dr. Thomson. According to tradition, they were in the habit, even a century and a half ago, of taking a vapor bath, on the first attack of disease, followed by an emetic of lobelia, if they could obtain it, and if not, they employed some other emetic herb. After the lobelia had done operating, they made use of a purgative to cleanse the bowels; and it is well known that Dr. Thomson formerly administered purgatives after a course. Now the fact that lobelia and the vapor bath were known to the American Indians as medicinal agents before the existence of Thomson, does not prove them to be any the less valuable, but clearly shows that he has made a claim to originality to which he is by no means entitled. I shall examine this subject more critically at a future time, but at present my limits compel me to forego any further remarks.

In conclusion, I will state that I have termed my work the *American Vegetable Practice*, because this appeared to be the most appropriate title, indicating, as it does, a system of practice which has received the sanction of millions of intelligent people throughout the United States; and while Dr. Thomson has been identified with this reform, it would be idle to deny, that the giant strides which it has made, and the great perfection to which it has now attained, are to be chiefly attributed to the zeal and philanthropy of intelligent persons throughout the Union, who have either devoted themselves exclusively to the

practice, making new discoveries in the use of vegetable remedies, or have entered the arena of medical reform from a sense of duty alone, determined, if possible, to save their fellow mortals from the hazardous experiments of the medical faculty.

In preparing the *American Practice* for the press, I have availed myself of the usual authorities, where they could be of any service.

The colored illustrations in the materia medica, will, I presume, meet with the entire approbation of the public. They have been procured at great expense; and were executed by a new process, invented by Mr. Sharp, recently of London, being the first of the kind ever issued in the United States. The different tints were produced by a series of printed impressions, the brush not having been used in giving effect or uniformity to the coloring. Connoisseurs in the arts have spoken of them in terms of admiration, and Mr. Sharp will no doubt succeed in bringing his discovery to a still greater degree of perfection.

My thanks are particularly due to Miss Caroline Neagus of Boston, who furnished me with most of the original drawings; and I need not say that they are executed in an admirable manner, and with strict fidelity to nature. Mrs. Anne Hill of Philadelphia, is also entitled to my thanks, for the graceful and pretty drawings of the fir balsam and buck horn brake, which she kindly furnished at my request.

Boston, June 17th, 1841.

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AMERICAN

VEGETABLE PRACTICE.

PART FIRST.

CONCISE

VIEW OF THE HUMAN BODY.

ANATOMY.

1. Anatomy teaches a knowledge of the structure of the human body, and explains the uses of its various parts and organs.

2. By *comparative anatomy* is understood a dissection of brute animals and vegetables, and a comparison of their structure and functions with those of the human body.

3. Than anatomy, there is no study more deeply interesting, or more eminently calculated to awaken our love and admiration of the Deity, and yet, from some cause or other, it is almost entirely neglected as an elementary branch of education. A young man on leaving his academy or college, under an impression that his education is complete, would be puzzled, perhaps, to give an adequate explanation of the process of digestion, or to point out the difference between venous and arterial blood.

4. With the exception of the medical faculty, who make it a study, we are more ignorant, as a general thing, of the wonderful structure of the human frame, than many of the uncivilized races of men. Major Long, who travelled extensively among the North American Indians, remarks that they are well acquainted with the position of the vital organs, from their habit of dissecting the "carcasses of the slain" on the field of battle. The South

Sea Islanders, also, says a writer on the subject, have a considerable share of rude anatomical knowledge. When Omai went into Dr. Hunter's museum in London, in company with Mr. Banks, it was found, though he could not explain himself intelligibly, that he knew the principal parts of the body, and something likewise of their uses; and manifested great curiosity or desire to have the functions of the internal parts of the body explained to him.

5. When I speak of the study of anatomy, I do not mean its minutia, for that, except to the surgeon who is called upon to perform critical operations, would be tedious and uninteresting. This objection does not hold good, however, with regard to the leading organs of the body, for these may be studied with ease and facility by all, not even excepting children. I am not alone in this opinion, for Mr. Combe has expressed himself in similar terms. Lecturing on the subject of education, he remarked, "I take the liberty to urge very earnestly on your attention, not only the advantage, but the necessity of introducing instruction in anatomy and physiology into popular education. * * * All I desire is, that the structure of the leading organs of the body should be explained so far as to render their functions intelligible; (not the minute details) and, that on this knowledge should be founded a clear and practical elucidation of the laws of health. I can certify from observation that this instruction may be communicated to *children of ten years of age with great success.*"*

6. It is gratifying that the study of anatomy is beginning to receive a portion of that attention to which it is so justly entitled; and until we make ourselves acquainted with its outlines, we must remain in comparative ignorance of the laws of health. Many devotees have already entered this interesting field of labor. A *Class Book of Anatomy* has been published in Boston for the use of schools, which, I am told, has been introduced into a number of them with success. There are other publications of a similar nature by Drs. Alcott, Bell, and Andrew Combe. These things look well for the cause of medical reform, and will convince the people, sooner or later, that the human body, delicately organized as it is, was never intended by the Creator as a receptacle for the poisonous drugs which are now employed in the treatment of disease.

7. The diplomatized physicians, who are anxious to monopolize the practice of medicine, contend that an individual must be

* Lectures on Phrenology, Amer. Edit. p. 349.

thoroughly acquainted with anatomy before he is competent to undertake the cure of disease. This is not true to the extent which has been represented. Hippocrates, who is styled the *father* of physicians, and who rid Athens of the plague that was threatening to destroy her, knew nothing of anatomy, for the dissection of human bodies was not then allowed. To come down to our own times, I must be permitted to say, that it is no uncommon thing for patients, who have been given up as incurable by the medical faculty, to be speedily restored to health by persons who are not only ignorant of anatomy, but illiterate in every other respect, and even incapable of writing their own names. The Sumatrans, according to Marsden, in his history of that country, cure all their diseases by bathing, and the use of a few simple herbs, and yet they know little or nothing of the structure of the human frame. The Duchess D'Abrantès relates that her mother was struck with palsy of the right side, and that the physicians of Montpelier, a town in France then celebrated for medical science, prescribed for her in vain. They could neither relieve her disease nor discover its cause. She remained for three months in great agony, scarcely able to articulate, and was at length cured by a countryman who brought fruit and vegetables to Montpelier for sale. When he proposed to undertake the case, the husband of the patient summoned her physicians in consultation, all of whom, says the Duchess D'Abrantès, were men of acknowledged talent. They made no objection whatever to the countryman doing the best he could for the relief of the patient, for they had declared a short time previous that she was beyond the reach of remedies. M. Barthez, the most distinguished of them, remarked, "Nature is unbounded in her resources, and how do we know what she may have in reserve through the hands of this man? Let him try his skill." The countryman immediately procured a quantity of herbs, which he boiled and applied to the parts affected, and by the expiration of a week, the patient was able to move her limbs, and in a month she was so far recovered as to be up and in her balcony.*

8. When I hear a physician boasting of his superior skill in the treatment of disease in consequence of his study of anatomy, I am reminded of the following anecdote. "Why do you not cure all the diseases of the human body," said a person to a celebrated anatomist, "since your skill in your profession is so great?" "My skill may be great," replied the anatomist, "but unfortunately, we anatomists are like the porters of a town, who are acquainted with all the streets, but are ignorant of what is passing in the houses."

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* Memoirs of the Duchess D'Abrantès, New York, 1832.

9. The truth of the above anecdote seems to have been realized by Dr. Rush, for he says, "Dissections daily convince us of our ignorance of the seats of disease, and cause us to blush at our prescriptions."

10. I have no desire to discourage the study of anatomy, however, for I hope the day is not far distant when it will be generally introduced into our schools as a primary branch of education; but I am satisfied, nevertheless, that an individual who is wholly ignorant of the subject, but acquainted at the same time with the properties and uses of innocent vegetable remedies, will be more successful in the cure of disease, than the educated physician with his array of poisons, how great soever may be his knowledge of the human frame.

11. Whether the Rev. C. C. Colton, in his admirable work entitled "Lacon, or Many Things in a Few Words," meant by a "non-professional man," one who was unacquainted with anatomy, I do not know; but, after remarking that "physicians have been *tinkering* the human constitution four thousand years, in order to learn to cure about as many disorders," he says, "it is better to have recourse to a non-professional man if he can cure our disorders, although he cannot explain them. In a certain consultation of physicians in this kingdom they all differed about the nature of an intermittent, and all plausibly defined the disease. At length a non-medical, who had been called in, thus interposed: Gentlemen, you all seem to differ about the nature of an intermittent; permit me to explain it. An intermittent fever, gentlemen, is a disorder which I can cure, and which *you* cannot."

SKELETON—BONES.

12. The skeleton is a bony structure or frame-work which determines the shape of the body, and serves as a base of attachment to the different muscles. It consists of two hundred and forty bones, of which there are sixty-three in the head, including thirty-two teeth, fifty-three in the trunk, sixty-four in the upper extremities, and sixty in the lower extremities.

13. In the general formation of the skeleton, there is no obvious difference between that of the male and the female, except that the latter, as a general thing, is more delicately formed, and the hip bones also spread out or expand to a greater degree than those of the male.

14. Bones. These are every where covered with a dense membrane which takes the name of *periosteum*, except on the skull,

Plate I.

Drawn by J Perry

Engraved by J Drayton

Drawn by J Lowry

Engraved by J. Drauton

where it is termed *pericranium*. It contains the blood-vessels by which the bones are nourished.

15. When madder is given to animals in their food, the bones acquire a red tinge, but on desisting from the use of it for a time, the coloring matter disappears, and the bones return to their natural color. The bones of young pigeons, it is said, will become of a rose color in twenty-four hours by the use of madder, and of a deep scarlet in three days. The bones most remote from the heart are the longest in acquiring this tinge. These facts demonstrate that the bones are supplied with blood-vessels, and are nourished in the same manner as the muscles and other soft parts of the body.

16. In a perfectly sound state, the bones are insensible, but when they are diseased they are excessively painful.

17. Bone is composed of an earthy matter, which gives it strength and hardness, and an animal substance of which a considerable portion is gelatin. The *first* may be demonstrated by placing the bone in dilute muriatic acid, which will dissolve the earthy part, and leave a gelatinous mass ; and the *second*, by calcination, which will burn out the gelatin, and leave the solid or earthy part. In children, while the bones are soft, these two substances are very nearly balanced, but in adults the earthy part is greatly in excess. In rickets, there is an absorption of the earthy part of the bones, which leaves them in a soft and flexible state.

EXPLANATION OF THE PLATES.

18. *Bones of the Head.*

1. Frontal bone or forehead.
2. Parietal or side bone.
3. Temple or temporal bone, to which the ear is attached.
4. Sphenoid or wedge-like bone, which cannot be seen without turning up the bottom part of the skull.
5. Occipital bone, which is placed at the back and lower part of the head.
6. Malar or cheek bone.
7. Superior maxillary or bones of the upper jaw.
8. Inferior maxillary or lower jaw bone.

19. *Bones of the Trunk.*

9, 10, 11. Cervical vertebra or bones of the spine, of which there are seven, placed one above the other.

12. Dorsal vertebra, twelve in number.

13. Lumbar vertebra, five in number, constituting the *loins*, *small of the back*, *or lumbar region*.

14. Sternum or breast bone.

15. The seven true ribs, attached to the spine and breast bone.

16. The five false ribs, unconnected with the breast bone.*

26. Sacrum or sacred bone, so called, because it was formerly offered in sacrifices.

27. Os coccygis, a small moveable bone, which terminates the spine.†

28. Os innominatum, comprising the ilium, 29, the ischium, 30, and the pubis or front bone, 31. The ilium is the *hip bone.*

20. *Bones of the Upper Extremity.*

17. Clavicle or collar bone.

18. Scapula or shoulder blade.

19. Os humeri or bone of the upper arm.

20. Radius or bone of the fore arm, which turns with the hand in its rotary motions.

21. Ulna, the bone by which, with the aid of the muscles, the fore arm is bent.

22. Carpus or wrist, consisting of eight little bones of peculiar shapes.

23. Metacarpus or bones constituting the palm of the hand.

24. Phalanges or bones of the fingers.

21. *Bones of the Lower Extremity.*

32. Os femoris or thigh bone.

33. Patella or knee pan.

34. Tibia or large bone of the leg.

35. Fibula or small bone of the leg.

36. Tarsus or instep, consisting of five bones, one of which is the os calcis or *heel bone*, seen at 37.

39. Metatarsus, consisting of five bones corresponding to the *metacarpus* of the hand.

40. Phalanges or toe bones.

MUSCLES—TENDONS.

22. The human body is estimated to have more than five hundred muscles, the most of which are in pairs. They constitute the fleshy part of the body, and consist of minute threads or fibres which are collected together in bundles, as the anatomists express it, and enveloped in sheaths to separate one from the other. They are of a red color, and are supplied with arteries, veins, lymphatics and nerves. They are equivalent to the red masses of flesh which we purchase in the market for food.

23. The muscles are variously shaped, some of them being spread out like the feather of a quill, while others are square,

* There are twelve ribs on each side, making in all twenty-four. It is a mistaken notion that males have one rib less than females.

† In women this bone is pushed back in time of labor to admit of the more ready passage of the head of the child. It is situated an inch or an inch and a half back of the anus, where it may be distinctly felt.

round, or in the form of a triangle. Their length too varies materially, the shortest being less than a quarter of an inch, and the longest twenty-five or thirty inches. The sartorius or *tailor's muscle*, so called because tailors are enabled to cross their legs with it, is two feet and a half long, and an inch and a half or two inches wide. It extends from the hip bone to the inner part of the tibia or large bone of the leg, having its attachment five or six inches below the knee.

24. The muscles are fastened to the bones, and by their contraction and relaxation, produce the various motions of which the body is capable. For instance, the arm is bent by the contraction of a muscle on its fore part, as is evinced by the ball or mass of flesh which is felt half way between the elbow and shoulder, and when the arm is extended the ball disappears, because the muscle is then relaxed, or in other words has returned to its usual dimensions. The muscles by which a limb is bent, are called the *flexors*, and those by which it is straightened, the *extensors*. These two sets of muscles *antagonize* each other; that is, the flexors pull in one direction, and the extensors in another, so that by their alternate contraction and relaxation, two distinct or opposite motions are produced. The muscles being attached to the bones, observes a writer on the subject, the latter may be considered as levers which are moved in different directions by the contraction of the former. That end of the muscle which adheres to the most fixed part is usually called the *origin;* and that which adheres to the more moveable part, the *insertion* of the muscle.

25. The muscles, says Mr. Bell, accomplish very different purposes. They move the fluids through the intestines and blood-vessels; sustain the body in its various positions; lengthen, shorten, or compress organs, as the tongue; widen or contract apertures, as the anus or fundament; and impart a rolling motion to the eye, and other organs. They contract with wonderful power, as is seen in fractures and dislocations, for they draw the bones out of place and shorten a limb several inches. Another evidence of their power is seen in the writhings and contortions of the body in convulsions, which are produced by the alternate contraction and relaxation of the muscles.

26. There are two classes of muscles, the *voluntary* and *involuntary*. The first are under the control of the will, and enable us to walk, run, leap, or perform any other act of locomotion. The muscles by which we bend the arm, or open or shut the mouth, are *voluntary*, because we can call them into play whenever we desire. The *involuntary* muscles are those over which

the will has no influence. The heart is a muscular texture, acting with tremendous force in propelling the blood through the arteries; and the stomach, intestines, and bladder, are all furnished with muscular fibres, by which they are endowed with a contractile power; but they are nevertheless uncontrolled by the will, and are therefore denominated involuntary muscles.

27. TENDONS. These constitute an important part of the muscles, binding them together at their extremities, and fixing them into the bones. They are hard, firm, white, inelastic, and very strong, blending themselves almost imperceptibly with the muscular fibres. Some of them are round, and others flat. The small cords which are felt on the fore part of the wrist, are the tendons of the muscles which move the hand. The large cord also which is felt at the heel, is the tendon of the muscles which constitute the calf of the leg. Anatomists term it the *Achilles tendon*, because, as fable reports, the mother of Achilles held him by that part when she dipped him into the river Styx to make him invulnerable.

LIGAMENTS.

28. These are strong, white, fibrous cords or bands, which connect the joints, and keep the liver, spleen, and other organs in their places. Like the bones, they possess but little sensibility in their healthy state, but when attacked by inflammation, they become exceedingly painful. The *capsular ligaments*, so called, surround the joints like a bag, and prevent the escape of the *synovia*, which is intended to lubricate the parts, and enable the ends of the bones to play easily upon each other.

CARTILAGES.

29. These are white, elastic, glistening substances, usually denominated *gristle*, which unite bones together, and cover the ends of those which move upon each other, as in the joints. They resemble bone in appearance, and like it are capable of being fractured. In children, cartilage forms a substitute for bone before the latter is formed. It is also added to bones to increase their length, as in the front part of the ribs, which consists entirely of cartilage.

MEMBRANES.

30. A membrane is an expanded thin substance which lines the cavities of the body, and envelopes all the organs.

31. Membranes are of different kinds, varying in structure and appearance as much as they do in function.

32. Serous Membrane. This surrounds and defends the brain, lines the chest and abdomen, and covers the lungs, stomach, intestines, and other organs contained in these two cavities. It has a smooth, shining appearance, and is constantly moistened by a serous exhalation or vapor, in consequence of which it receives its name. Its appellation is varied however, according to the cavity which it lines, as *pleura* in the chest, *peritoneum* in the abdomen, and *dura mater* when it surrounds the brain. In a state of health it is white, but in inflammation its vessels become charged with blood, and it assumes a corresponding red appearance. The water which collects in cavities, constituting dropsies, is an exhalation from this membrane, which is not carried off by the absorbents. When it is inflamed, it is prone to form adhesions, so that the lungs may become glued to the internal surface of the ribs, or the intestines to the internal surface of the abdominal cavity, or the intestines may contract adhesions among themselves.

33. Mucous Membrane. The mucous membrane is so called, because it secretes a peculiar fluid, of a slimy nature, which is denominated *mucus*. It lines the nose, mouth, throat, air passages of the lungs, urethra, bladder, stomach, intestines, and other free passages. In the stomach and intestines it is thrown into folds, which increase the extent of its absorbing surface, and prevent the food from hurrying through the intestinal canal with too much rapidity. It has a soft or velvet-like appearance, and is of a pale pink color in health, but red when inflamed. A false membrane forms upon its surface, which is coughed up from the windpipe in croup, and discharged from the bowels in acute and chronic diseases, but particularly in the latter. Blood not unfrequently exudes from this membrane, constituting hemorrhage, and this may take place from the lungs, stomach, or any other organ which it lines. The mucous, unlike the serous membranes, do not form adhesions when they are inflamed, or the intestinal canal, windpipe, and other free passages, would become closed or obliterated in severe inflammatory affections.

34. Cellular Membrane. This is a loose membranous structure, forming a great number of little cells, which fills up the spaces between the muscles and other solid parts of the body, connecting them together without interfering with their functions. It is every where interposed between the skin and the muscles, and imparts a smoothness and softness to the surface of the body.

The cells are moistened by a watery vapor which is exhaled from the minute branches of the arteries, and if it happens to be in excess, or rather, if it is furnished in a greater quantity than can be removed by the absorbents, it fills and distends the cells, and constitutes dropsy. The water also passes from one cell to another, there being a free communication between them, and hence it is that the feet and legs of a dropsical patient, who is much in the erect, or sitting posture, become enlarged or swelled toward evening, and diminish in size during the night while he occupies the horizontal posture in bed. The communication between the cells of this membrane, enables butchers to blow their veal, and give it a full or bloated appearance.

35. *Adipose membrane* is only another name for the *cellular*, and is so called because fat is deposited in its cells, as in the soles of the feet, around the kidneys, and between the skin and muscles.

SKIN.

36. The skin is the external covering of the body, and consists of three layers, namely, the cuticle or scarf skin, the *rete mucosum*, for which there is no English name, and the cutis or true skin, which is the innermost layer.

37. The *cuticle* is that part which is raised in a blister. It is devoid of blood vessels and nerves, and exhibits no sensibility. It separates in the form of scales after certain cutaneous diseases. It is filled with pores, some of which serve for the passage of hairs, and others for the escape of the perspirable matter. It is constantly wearing out, and as constantly renewed. It is very thick on the palms of the hands and soles of the feet, particularly in the laborer, which is a contrivance of nature to defend the delicate parts beneath from the injury which they might otherwise receive. Indeed, in every part of the body, it serves as a protection to the true skin, and prevents the too ready absorption into the system of deleterious substances with which it comes in contact. It is the thickening of the cuticle which causes corns.

38. The *rete mucosum* is the second layer of the skin, interposed between the cuticle and cutis, and contains the coloring matter of the races. It is black in the negro, yellowish in the mulatto, and white in those whose skins are of a corresponding color.

39 The *cutis* or *true skin* is described by anatomists as consisting of dense fibres, intersecting each other in various directions, and leaving between them holes for the passage of blood-

vessels and nerves, with which it is plentifully supplied. So numerous are they, in fact, that it is impossible to prick the skin with the finest needle, without producing pain and causing a flow of blood.

40. Within the skin, certain little glands* are placed, which open upon its surface by minute orifices, and which secrete an oily fluid by which the skin is lubricated and defended from the action of moisture. It is owing to this substance that water collects upon the skin in drops.

41. Besides the other uses of the skin, it is the seat of perspiration, which serves many important purposes in the animal economy. This is of two kinds, *insensible* and *sensible*. It is *insensible*, when it passes off in the form of an invisible vapor, and *sensible*, when it collects on the surface of the body in form of sweat. It keeps the skin moist and pliable, and separates from the blood the useless or worn out particles of matter with which it becomes charged in the round of the circulation. In the form of sweat, it regulates the temperature of the body in warm weather. An individual who perspires freely in summer, is much less oppressed by the heat, than one who does not perspire at all. The reason of this is, that the surplus heat is carried off by the sweat, together with the exhalation from the lungs. So great is the influence of perspiration in reducing the temperature of the body, that Sir Joseph Banks, and others, have confined themselves for a considerable time in a room 50 degrees hotter than boiling water, without experiencing any pernicious consequences.

42. Experiments have been made to determine the amount of perspirable matter which passes off by the skin. Sanctorius, who was the first, and most indefatigable laborer in this field of enquiry, came to the conclusion that about two thirds of the food and drink taken into the system, were eliminated from it through the medium of the skin, while the remaining third passed off by the bowels, the lungs, and the kidneys. Admitting this estimate to be correct, and it does not differ very materially from that of Lavoisier and Seguin, it will be seen that if the insensible perspiration is arrested for a day or two, the blood will become charged with impurities to an almost incredible extent, and disease, in some form or other, will be the natural consequence. The skin being endowed with the important office of removing waste matter from the system, we see an ample reason, says Dr. Combe, why checked perspiration should prove so detrimental to health; and hence his remark, that it is a powerful cause of disease and

* Called *sebaceous glands*.

death. People know the fact, he continues, and wonder it should be so, that cold applied to the skin, or continued exposure in a cold day, often produces a bowel complaint, a severe cold in the chest, or inflammation of some internal organ; but were they taught, as they ought to be, the structure and uses of their own bodies, they would rather wonder that it did not always produce one of these effects.

43. Mr. Bell says, "Some practitioners take the stomach, others the bowels, and others the liver, on which they harp continually; let any one take the skin as his object of care, and his practice will have equal success; and if he introduce his system by showing that health is enjoyed when the various functions, which together form the animal economy, are perfect, and that one function cannot be in health unless the whole be also, he will, in my opinion, have better claims to public favor than any who has yet flourished in it by promulgating doctrines in regard to the functions and diseases of individual parts."*

GLANDS.

44. These are organized parts, composed of arteries, veins, and absorbents, and designed to separate some peculiar fluid from the blood, which is termed a secretion. They differ greatly both as to size and shape. The largest gland in the body is the liver, which secretes the bile, and empties it by means of a duct into the intestines. The female breast is a gland designed for the secretion of milk.

45. The mucous glands are a numerous class, and consist of little bags formed by a peculiar membrane, which open by minute ducts through which they discharge their contents. They are found in the nose, tongue, windpipe, stomach, intestines and urinary bladder, and furnish the mucus with which these parts are lubricated. The sebaceous glands (39) are similar in structure, but secrete an oily fluid instead of mucus.

46. There are three principal salivary glands, which are so called because they secrete *saliva*. The first or largest is the *parotid gland*, situated principally between the ear and the angle of the lower jaw, and opening by a duct upon the inner surface of the cheek. The second in order is the *submaxillary*, seated under the angle of the jaw, and opening by a duct on the outside of the frenum or bridle of the tongue. The last of these glands is the *sublingual*, placed under the tongue near its back part, and furnished

* Bell's Anatomy and Physiology, 6th Amer. edit. vol. ii. p. 361.

with several excretory ducts by which its secretion is poured into the mouth. The above glands, it will be remembered, are in pairs.

47. The *lymphatic glands* are very numerous in some parts of the body, and appear to have no other office than that of receiving and transmitting the lymphatic vessels. They have no excretory ducts. They are familiar to us as existing in the groin, armpit, and along the neck. In the latter, some of them are quite superficial, lying immediately under the skin. They swell in scrofulous affections, and form large tumors. The glands of the armpit and groin are also liable to become diseased, the first passing into a state of induration form cancer of the breast, and the second enlarging and suppurating in syphilitic and other affections.

URINARY ORGANS.

48. The urinary organs consist of the kidneys, ureters, bladder, and urethra.

49. KIDNEYS. These organs, of which there are two, are of a red color, and resemble a kidney bean in shape. They are about six inches long, and four inches wide. They belong to the contents of the abdomen, and are placed on each side of the spine, being stretched across the two lower false ribs. They are in contact with the inferior part of the diaphragm, and it is owing to this circumstance, that pain is felt in respiration when the kidneys are inflamed. It has been ascertained that one of these organs may be entirely destroyed without being indicated by any particular symptoms, and without the individual suffering any apparent inconvenience. The urine, which is secreted by the kidneys, is collected in little tubes and poured into what is termed the cavity or pelvis of the kidney, whence it passes into the ureters, and is emptied into the bladder.

50. URETERS. These are membranous canals, which convey the urine from the kidneys to the bladder, a distance of eight or ten inches. Except at their junction with the kidneys, they are about the size of a goose quill, and enter the bladder near its neck, running for some distance between its coats, before they open into its cavity. By this arrangement the urine is prevented from regurgitating.

51. BLADDER This is the receptacle of the urine, and is placed within the pelvis, being situated in the adult below the pubis

or front bone when it is empty, but rising considerably above it when it is distended. It has the rectum behind it in man, and the vagina in woman. Its neck is contracted by muscular fibres, which causes the urine to be retained until it is expelled by an effort of the will. The inner coat of the bladder, when the organ is not distended, falls into folds, like that of the stomach and intestines. It is plentifully supplied with mucus, which defends it from the acrimony of the urine; and in some diseases, a great proportion of the fluid evacuated consists of mucus.

52. URETHRA. This is a membranous canal, running from the neck of the bladder through the penis, and terminating at its extremity in what is termed the *meatus urinarius*. In women it is not more than an inch and a half or two inches long. It is lined by a mucous membrane, which is liable to be thickened by inflammation, thereby forming a stricture, and interfering with the escape of the urine.

BILIARY ORGANS.

53. These consist of the liver, gall-bladder, and biliary ducts.

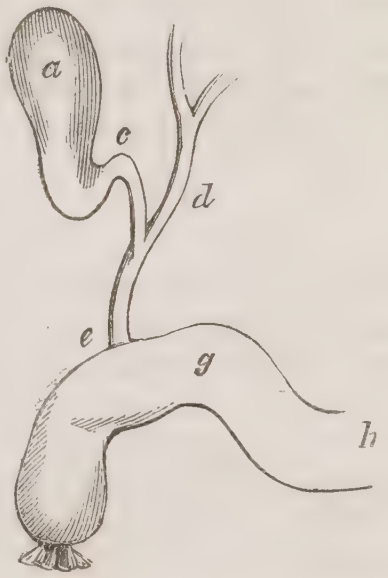
54. LIVER. The liver is of a deep red color, and weighs in the healthy adult from three to four pounds, being the largest organ in the body. It is situated in the upper part of the abdomen, under the ribs, and is divided into two principal lobes, the right and left. Its upper surface is convex, and corresponds to the concavity of the diaphragm, to which it is attached by several ligaments. Its lower surface is hollow, and is in connection with the stomach and duodenum. The liver is thick and massy toward the right side, but thin on the left, where it spreads itself smoothly over the stomach, when the latter is distended.

55. In some cases of disease, the liver becomes enlarged, and may be felt projecting below the ribs in front of the abdomen, on the right side, and sometimes, though rarely, on the left. It may however be pushed down by the diaphragm in affections of the chest, when the organ itself has not undergone any sensible change. In some instances it acquires an enormous bulk, and weighs from twenty-five to thirty pounds. It is altered materially in its texture by the processes of disease, being in some cases of a soft consistence, and in others extremely hard and firm. It also undergoes what is termed the fatty degeneration. Magendie found that animals which had been fed exclusively on butter, or fat, presented, on examination after death, a fatty state of the liver.

56. The liver is supplied with blood-vessels, nerves, and absorbents, and has for its office the secretion of bile, which plays so important a part in the process of digestion.

57. Gall Bladder. This is a membranous bag or receptacle, large enough to contain one or two ounces of bile, and is situated on the under surface of the right lobe of the liver. Its shape is represented in the accompanying figure. It appears to be a receptacle for the collection of bile in the intervals of digestion. Gall stones are occasionally formed in the gall bladder by a concretion or hardening of the bile. These stones are sometimes very numerous, producing great distention of the gall bladder. They occasion but little inconvenience however, unless they become lodged in the gall ducts, and then they produce severe pain, and by interfering with the passage of the bile into the intestines, give rise to jaundice.

Fig. 1.



Gall Bladder and Biliary Ducts.

a, gall bladder ; *c*, cystic duct ; *d*, hepatic duct, formed by a branch from the right, and one from the left lobe of the liver ; *e*, ductus communis choledochus or common duct ; *g*, portion of the duodenum, separated from the stomach at *h*.

58. Biliary Ducts. These consist of the hepatic, cystic, and common ducts, as are represented in the above figure. The bile is secreted in the liver, and conveyed by an infinite number of little tubes to the hepatic duct, through which it passes on its way to the duodenum. The union of the hepatic and cystic ducts forms the common duct, which enters the duodenum about five inches from the pyloric orifice of the stomach, running obliquely through the coats of the intestine. The bile, in order to reach the gall bladder, must pass along the hepatic duct, and then ascend the cystic duct against gravity. How this is accomplished, has not yet been satisfactorily explained by anatomists.

SPLEEN.

59. The spleen is a soft, spongy body, of a bluish or purple color, situated above the left kidney, in the upper part of the abdominal cavity. It varies in its dimensions, but is generally about

four inches long, three inches wide, and two inches thick. It is connected with the left extremity of the stomach by small blood-vessels, together with the cellular membrane, and has an attachment also to the lower edge of the diaphragm, near the spine. It is sometimes greatly enlarged, and may be felt below the ribs, in the region of the stomach. This often occurs in typhus fever. It is plentifully supplied with blood-vessels, but has no excretory duct. The use of the spleen is unknown. The opinions regarding its supposed function, says Mr. Bell, are full of loose conjectures or wild hypotheses, and nothing is yet certainly known of its office. It has been removed in animals, without being followed by any bad consequences.

PANCREAS.

60. The pancreas or sweet bread is a glandular body, of a pale red color, bearing a resemblance in shape to the tongue of a dog. It lies across the spine, immediately behind the stomach, and is in contact at its smaller extremity with the spleen. It has an excretory duct, which opens into the duodenum, in common with the duct proceeding from the liver. It secretes a fluid similar to the saliva, which seems to be necessary in the process of digestion.

THORACIC DUCT.

61. The *thoracic duct* is called the trunk of the absorbents, because it receives the absorbent vessels from almost every part of the body, including of course, the lacteals and lymphatics. It is about the size of a crow-quill. It arises at the lower and back part of the abdominal cavity, and passes upward along the spine as high as the sixth vertebra of the neck, where it inclines to the left, takes a downward direction, and enters the left subclavian vein, just under the clavicle or collar bone. It pours the chyle which it receives from the lacteals of the intestines, into the current of venous blood.

ABSORBENTS AND ABSORPTION.

62. The absorbents are small, delicate, transparent vessels, which exist in every part of the body, and are denominated *lacteals* and *lymphatics*, according to the liquids which they contain.

62. The *lacteals* open on the inner surface of the intestines, and receive into them the chyle or milk-like fluid of which the

blood is formed. They perforate the middle and outer coats of the intestines, pass through the mesentery, and terminate in the thoracic duct. They may be readily traced in the mesentery of a dog killed an hour or two after he has been fed ; for they are then fully distended with chyle. They disappear, however, soon after death. In their progress to the thoracic duct, they pass through what are termed the mesenteric glands, the functions of which are not satisfactorily known. The lacteals are an important set of vessels, for it is through their agency that the chyle or nutricious part of the food is conveyed from the intestines to the blood.

64. The *lymphatic vessels* arise from every part of the body, and contain a transparent fluid denominated *lymph*. With the lacteals they form what is called the *absorbent system*. They are extremely small and delicate, and cannot be readily detected with the naked eye ; but when injected with quicksilver, they become considerably enlarged, and present a knotty appearance, resembling a chain of beads. They pass through what are termed the lymphatic glands, and in common with the lacteals, terminate in the thoracic duct.

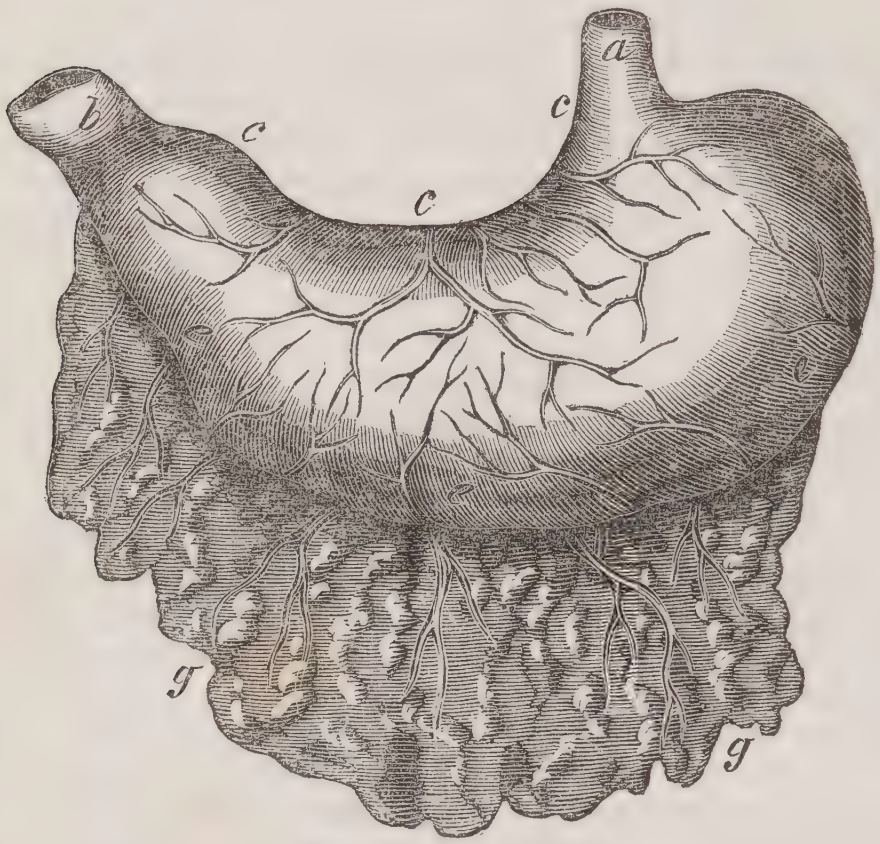
65. The lymphatics take up fluids from different cavities and parts of the body, and carry them into the circulation. Hence it is that they prevent the frequent occurrence of dropsies. They absorb medicinal substances placed in contact with the surface. It is well known that mercury rubbed on the skin is absorbed, and produces salivation as effectually as when taken internally. In the same manner, croton oil rubbed on the abdomen causes purging, and arsenic applied to cancers, and opium to burns, says a writer on physiology, have been absorbed in quantities sufficient to poison the patients. Blood effused under the skin, giving it a black appearance, is carried off by the lymphatics. The same vessels absorb the parts over deep seated tumors, enabling the matter which they contain to approach the surface. According to Magendie, fluids disappear from the stomach by absorption, with great rapidity, as he has shown by passing a ligature round the pylorus. Dr. Combe says—"So rapid is absorption from the stomach in the morning, that I have frequently seen *nine* tumblers of a saline mineral water taken at eight o'clock, and a very hearty breakfast finished within half an hour after the water was drunk."

STOMACH.

66. The stomach is a membranous sac or bag into which the food passes through the œsophagus or gullet, preparatory to the process of digestion. It is placed in the upper part of the abdom-

inal cavity, stretching from left to right, and is shaped somewhat like the bag of a bag-pipe, as is indicated by the accompanying figure. Moderately distended, it is capable, in the adult male, of

FIG. 2.



External View of the Stomach.

a, cardiac or upper orifice ; *b*, pyloric or intestinal orifice, at which the duodenum commences ; *c*, *c*, *c*, lesser curvature or arch of the stomach ; *e*, *e*, *e*, greater curvature or arch of the stomach ; *g*, *g*, omentum or caul.

holding about three pints. Its left extremity, which is much larger than the right, is situated under the ribs on the left side, where it is in contact with the diaphragm ; its right extremity extends a little beyond the sternum or breast bone, in the direction of the right side, and is covered by the shelving edge of the left lobe of the liver, which is interposed between it and the diaphragm. The left extremity of the stomach is connected with the spleen, and its lower or inferior portion with the omentum, which is spread over the intestines like an apron. The stomach is separated from the small intestines by the arch of the colon, which passes immediately below it from the right to the left side

67. The stomach has two orifices, the *cardiac* or *upper*, and the *pyloric* or *intestinal*. The first is formed by the termination of the œsophagus or gullet, and the second by the communication of the stomach with the duodenum. The intestinal orifice consists of a valve or circular fold of mucous membrane, which is called the *pylorus*, from a Greek word signifying *gate-keeper*, because it does not readily admit of the passage of undigested food. The stomach has also two curvatures or arches, the *lesser* of which embraces the spine and aorta or great artery of the body, while the *greater curvature* forms the rounded outline of the abdomen, when the stomach is distended with food.

68. The stomach consists of three coats, each of which is endowed with a particular function. The *outer*, *serous* or *peritoneal coat*, so called, is a firm, strong, shining membrane, which not only covers the stomach, but also the intestines, and lines the cavity of the abdomen. The *middle* or *muscular coat*, is composed of fleshy fibres, one layer of which is longitudinal, and the other transverse or circular. These fibres are capable of contraction and relaxation, and produce the peculiar motions of the stomach in digestion. The *inner* or *mucous coat*, is a soft, velvety membrane, of a pale pink color in health, but red when inflamed. It is of larger dimensions than the other two coats, and is thrown into folds or wrinkles when the stomach is not fully distended. It is constantly covered with a thin, transparent mucus, which serves to protect it in some measure from the injury which it might receive from the contact of irritating matters.

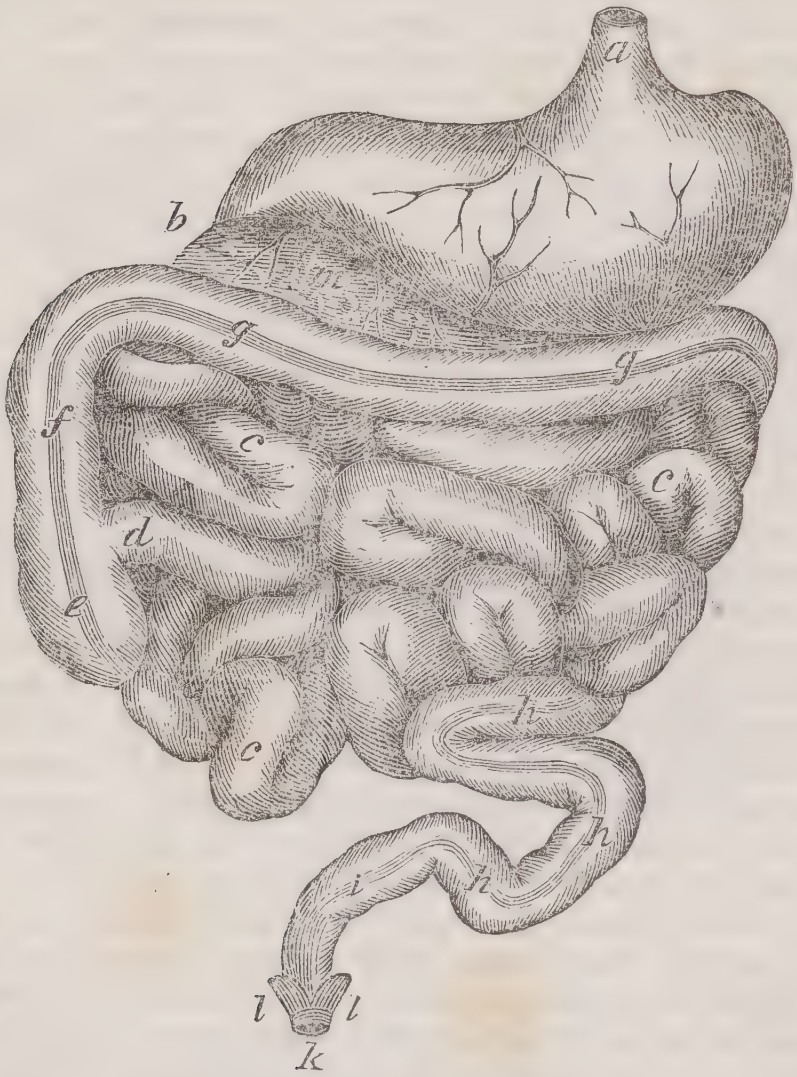
69. Blood-vessels and nerves are distributed to the stomach more plentifully than to any other organ. Among the latter is a branch from the *great sympathetic*, which causes the organ to be injuriously affected by diseases in remote parts. The number of the nerves, and the variety of the sources whence they are derived, says Dr. Dunglison, explains the great sympathetic influence exerted upon the stomach by affections of other parts of the system. It sympathizes, he continues, with every protracted morbid change in the individual organs, and hence it was termed by Hunter, the *centre of sympathies*.

INTESTINES.

70. The intestines constitute that portion of the alimentary canal which commences at the pyloric orifice of the stomach, and terminates, after many convolutions or windings, at the anus. In

the adult, they are estimated to be six or seven times longer than the body. They are attached to the spine by folds of the peri-

FIG. 3.



View of the Stomach and Intestines.

a, the cardiac or upper orifice of the stomach ; *b*, commencement of the duodenum ; *c*, *c*, *c*, folds of the small intestines ; *d*, ilium or lower part of the small intestines, terminating in the cæcum ; *e*, cæcum or commencement of the large intestines ; *f*, ascending colon ; *g*, *g*, arch of the colon, traversing the abdomen from right to left beneath the stomach, and passing downward behind the small intestines to form the *descending colon ; h*, *h*, *h*, sigmoid flexure of the colon, so called from its resemblance to the letter *S ; i*, the rectum ; *k*, anus, surrounded by a muscle called the *sphincter ani*, which, when it contracts, shuts the passage through the anus into the rectum ; *l*, *l*, two muscles called the *levatores ani*, which surround the extremity of the rectum and serve to pull it upward after an evacuation by stool ; *m*, portion of the mesocolon.

toneum, called the *mesentery*, which contains the mesenteric glands, and is furnished with arteries, veins, lacteals, and nerves.

It spreads out from the spine like a ruffle from the bosom of a shirt, if I may so speak, and has the intestines attached to its margin, so that, with the exception of a limited portion, these organs are permitted to float somewhat loosely in the cavity of the abdomen.

71. The structure of the intestines is nearly similar to that of the stomach, and they have in common with it three coats or layers of membrane, the *outer* or *peritoneal*, the *middle* or *muscular*, and the *inner* or *mucous*. The muscular coat, as in the stomach, consists of two sets of fibres, the *longitudinal* and *circular*. These, by their alternate contraction and relaxation, produce the vermicular or peristaltic motion, which may be observed by looking into the abdomen of a newly killed animal. The longitudinal fibres shorten the intestines, and give rise to a motion similar to that of the creeping of a worm, and hence the term *vermicular*, from a Latin word signifying *worm*. The office of the circular fibres is to diminish the diameter of the intestines, and by contracting from above downward, in concert with the longitudinal fibres, they push the contents of the bowels onward toward the anus. Sometimes, however, this motion is inverted, as in severe cases of colic, and the contents of the intestines are forced upward instead of downward, until at length fecal matter is discharged by vomiting.

72. The intestines are divided into *small* and *large*, the first being about thirty feet in length, and the second not more than six. The small intestines, again, are subdivided into the *duodenum*, *jejunum*, and *ilium*, and the large into the *cæcum*, *colon* and *rectum*. These subdivisions however, are in a great measure arbitrary, and are only resorted to by anatomists as a matter of convenience in designating certain portions of the intestinal canal.

73. The *duodenum* is about a foot long, and commences at the pyloric orifice of the stomach. It is larger than any other of the small intestines, and from its size, has been considered a secondary stomach. It is perforated three or four inches from the pylorus by the biliary and pancreatic ducts, through which it receives the bile and pancreatic juice. These fluids are detained in the duodenum sufficiently long to be mixed with the chyme, which is formed in the stomach, and by this union a new product arises, which is denominated *chyle*, a milk-like fluid from which the blood is formed.

74. We have seen that the bile is received into the duodenum, and not into the stomach, but the secretion occasionally finds its way into the latter organ, in consequence of the peristaltic motion of the duodenum being inverted. This occurs in bilious affections, and in protracted vomiting, in which the irritability of the stomach is communicated to the duodenum. Mr. Bell says, "it may be of consequence to attend to this fact in the operation of an

emetic, for the stomach will sometimes appear to be discharging foul and bilious matter, which we naturally may suppose to have been lodged in it, but which has actually flowed from the duodenum, or has even come recently from the ducts, in consequence of the operation of the vomit."*

75. The remaining portions of the small intestines are the *jejunum* and *ilium;* these occupy the middle and lower part of the abdomen, and are encircled by the cæcum and colon, as represented in the preceding figure. The jejunum commences at the duodenum, and is so called from being generally found empty. It is eleven or twelve feet long. The ilium, which terminates in the cæcum or commencement of the large intestines, is seventeen or eighteen feet long, and receives its name from its numerous windings or convolutions.

76. The small intestines are the seat of an important function. It is here that the chyle is separated from the innutritious part of the food, and taken up by the absorbent or lacteal vessels for the nourishment of the body. These vessels are very numerous, and open their mouths or orifices upon the internal surface of the mucous membrane. They convey the chyle into the thoracic duct, which empties it into the subclavian vein, as already stated. The mucous membrane lining the small intestines, is thrown into plaits or folds similar to that of the stomach, by which its absorbing surface is increased considerably in extent, and the irregularities to which the folds give rise, prevent the food from being urged on with too much rapidity in its downward course. The contents of the small intestines remain in a fluid state till they arrive in the vicinity of the cæcum, and here, the chyle having been in a great measure absorbed, they acquire a greater degree of consistency, and begin to assume the color and smell of ordinary feces.

77. Large Intestines. These, as I have said, are divided into three portions, the *cæcum*, *colon*, and *rectum*.

78. The *cæcum* is a pouch or bag which receives the lower end of the ilium or termination of the small intestines. It is about three inches in length, and nearly the same in diameter. It is situated at the lower part of the abdomen, on the right side, just within the hip bone, where it is tied down so as to be unable to change its position. It is furnished with a valve at its junction with the ilium, which is designed to prevent the return of its contents into the small intestines.

79. The *colon* is a continuation of the cæcum, taking an upward direction toward the liver, where it forms an angle and crosses from the right to the left side, constituting what is termed the

* Bell's Anatomy and Physiology, 6th Amer. edit. vol. ii. p. 400.

transverse arch of the colon. It then forms a second angle and descends, terminating in the *sigmoid flexure*, so named from its resemblance in shape to the letter S. It is here that the feces accumulate, previous to their being voided by stool. I may remark, also, that an injection, in the ordinary quantity, does not reach beyond the sigmoid flexure. The ascending colon passes over the right kidney, and the descending colon over the left kidney. The right portion of the *transverse arch* is in contact with the liver and gall-bladder, and is usually found, after death, of a yellow color, from the transudation of bile. The right portion of the arch is situated under the stomach, having below it the convolutions of the small intestines. The colon, in post mortem examinations, is usually found empty.

80. The *rectum* is a continuation of the sigmoid flexure of the colon, lying within the pelvis, and terminating in the anus. It has the bladder in front of it in males, but in females, the vagina and uterus are interposed between it and the bladder. It is seven or eight inches long, and widens in its progress downward till it reaches the anus, where it contracts into a narrow orifice.

DIGESTION.

81. Among the various writers on the subject of digestion, I know of no one who is more entitled to respect and attention, than Dr. Beaumont of this country, styled by Dr. Combe of Edinburgh, the *American Physiologist.* He was a surgeon in the United States Army, and was called to the case of a young man named Alexis St. Martin, who had been accidentally wounded in the left side, by a discharge of duck shot from a musket, which carried away the skin, muscles, and a portion of the ribs, and perforated the stomach. The patient finally recovered from the effects of the wound, but the orifice in the stomach still remained; and the food and drink were only prevented from passing through it by the application of compresses and bandages. Finally, however, the orifice was filled by a small fold or doubling of the coats of the stomach, which acted as a valve, and which could be easily pushed aside by the finger so as to command a view of the interior of the organ. Dr. Beaumont, therefore, had rare advantages in making himself acquainted with the process of digestion, and after devoting much time to the investigation of the subject, he published an interesting work explanatory of his labors, entitled *Experiments and Observation on the Gastric Juice*, from which I shall have occasion to make frequent extracts throughout these volumes.

82. When food is received into the stomach, it does not remain quiescent, but undergoes, as Dr. Beaumont informs us, a kind of churning motion, produced by the alternate contraction and relaxation of the fibres composing the muscular coat. These fibres, as I have said, are disposed in two layers, one of which is circular, and the other longitudinal. The circular fibres lessen the transverse diameter of the stomach, while the longitudinal fibres draw the two extremities nearer together. The motions which thus arise, says Dr. Beaumont, not only produce a constant disturbance or churning of the contents of the organ, but compel them, at the same time, to revolve around the interior, from point to point, and from one extremity to the other. These revolutions are completed in from one to three minutes. The contents of the stomach, during digestion, exhibit a "heterogeneous mass of solids and fluids—hard and soft—coarse and fine—crude and chymified—all intimately mixed, and circulating promiscuously, like the mixed contents of a closed vessel, gently agitated, or turned in the hand."

83. As the food becomes chymified or reduced to a pulp, it passes gradually through the pylorus into the intestines; but if an undigested portion presents itself for admission, the pylorus immediately contracts and forces it back into the cavity of the stomach; and it is not until after repeated efforts of the kind, that the undigested portion is permitted to pass.

84. When the stomach is emptied of its contents, it becomes inactive, and diminishes greatly in size.

85. Digestion, though greatly assisted by the motions of the stomach, is mainly dependent on a fluid termed the *gastric juice*. This is described by Beaumont as transparent, a little saltish, and very perceptibly acid. When the stomach is excited or stimulated by food, this juice exudes from little vessels in the inner coat. It is powerfully antiseptic, and will check the putrefaction of meat. By this provision of nature, it is probable that food approaching a state of decomposition, is prevented, in some measure, from doing injury to the system. Applied to fetid sores, it disposes them to heal. Unmixed with any extraneous matters, it remains pure for many months. Combined with a large portion of saliva, it becomes offensive in a few days. It will act upon meat and vegetable substances out of the stomach, as well as in it, but a longer time is required. It produces no effect upon any portion of the *living* body; but so powerful is its action upon dead animal matter, that it digests the toughest cartilage, and even bone. It combines with a definite portion of food only, so that if an undue quantity of aliment be taken into the stomach, it will re-

main undigested, and prove a source of irritation. When the stomach is much disordered, or in a feverish state, it is worthy of remark that the gastric juice is not secreted, and hence it would be improper to burthen it with food under such circumstances, unless it be of a soothing, or mucilaginous character. Solid food especially would be highly pernicious.

86. Digestion is retarded or accelerated in proportion to the tenderness of the fibre upon which the gastric juice is required to act. Hence it was observed by Beaumont, that while rice or sago was disposed of in an hour, or an hour and a half, other substances, as veal, salmon, and roasted pork, would require four or five hours for the digestive process.

87. Oily substances are digested with great difficulty.

88. Wine, spirits, water, and other fluids, are not affected by the gastric juice. Coffee, says Beaumont, is probably not digested, but carried into the circulation without much change.

89. Fluids pass from the stomach in a very short time after they are received, either by absorption, or through the pyloric orifice.

90. Soup is not digested until its watery portion is absorbed. The same remark is equally applicable to all fluids containing nutricious particles.

91. Milk coagulates before it receives the solvent action of the gastric juice. This is the reason why milk is injurious to many people. The coagulated masses remain in the stomach, and give rise to irritation, and other unfavorable symptoms.

92. The fat of meat is converted into oil before it is digested.

93. Moderate exercise immediately after a meal increases the temperature of the stomach, and assists the digestion; but if the exercise is severe or fatiguing, it materially retards the digestive process.

94. The medium time for the digestion of a meal, is about three hours and a half.

95. The usual temperature of the stomach is about one hundred degrees. It varies, however, according to circumstances. Beaumont observed that active exercise increased it about one and a half degrees. He found also that it was greatly diminished by the use of cold drinks. He gave St. Martin a gill of cold water, and the temperature of the stomach immediately fell from one hundred to seventy degrees, and more than half an hour elapsed before the organ regained the heat which it had lost. Persons in ill-health, therefore, should be sparing in the use of cold drinks, as they tend to chill the system, and very often give rise to sudden colds, toothach, rheumatic pains, and other forms of disease, while the individual is wholly ignorant of the cause. I know

a gentleman who cannot take an ice-cream, without being attacked in from three to twenty-four hours with a toothach; and a draught of cold water will often produce the same effect.

96. TABLE

SHOWING THE LENGTH OF TIME REQUIRED FOR THE DIGESTION OF DIFFERENT ARTICLES OF FOOD.

		Hours.	Min.
Rice,	Boiled,	1	
Sago,	"	1	45
Tapioca,	"	2	
Barley,	"	2	
Milk,	"	2	
"	Raw,	2	15
Pig's feet, soused,	Boiled,	1	
Tripe, soused,	"	1	
Brains,	"	1	45
Venison steak,	Broiled,	1	35
Turkey, domestic,	Roasted,	2	30
" "	Boiled,	2	25
" wild,	Roasted,	2	18
Goose, "	"	2	30
Pig, sucking,	"	2	30
Liver, beef's, fresh,	Broiled,	2	
Lamb, fresh,	"	2	30
Chicken, full grown,	Fricassee,	2	45
Eggs, fresh,	Hard boiled,	3	30
" "	Soft "	3	
" "	Fried,	3	30
" "	Roasted,	2	15
" "	Raw,	2	
" whipped,	"	1	30
Custard,	Baked,	2	45
Codfish, cured, dry,	Boiled,	2	
Trout, salmon, fresh,	"	1	30
" " "	Fried,	1	30
Bass, striped, "	Broiled,	3	
Flounder, "	Fried,	3	30
Catfish, "	"	3	30
Salmon, salted,	Boiled,	4	
Oysters, fresh,	Raw,	2	55
" "	Roasted,	3	15
" "	Stewed,	3	30
Beef, fresh, lean, rare,	Roasted,	3	
" steak,	Broiled,	3	
" fresh, lean,	Fried,	4	
" old, hard, salted,	Boiled,	4	15
Pork steak,	Broiled,	3	15
" fat and lean,	Roasted,	5	15
" recently salted,	Boiled,	4	30
" "	Fried,	4	15
" "	Broiled,	3	15

		Hours.	Min.
Pork recently salted,	Raw,	3	
" "	Stewed,	3	
Mutton, fresh,	Roasted,	3	15
" "	Broiled,	3	
" "	Boiled,	3	
Veal, fresh,	Broiled,	4	
" "	Fried,	4	30
Fowls, domestic,	Boiled,	4	
" "	Roasted,	4	
Ducks, domestic,	"	4	
" wild,	"	4	30
Suet, beef, fresh,	Boiled,	5	30
" mutton,	"	4	30
Butter,	Melted,	3	30
Cheese, old, strong,	Raw,	3	30
Soup, beef, vegetables and bread,	Boiled,	4	
" marrow bones,	"	4	15
" bean,	"	3	
" barley,	"	1	30
" mutton,	"	3	30
Green corn and beans,	"	3	45
Chicken soup,	"	3	
Oyster "	"	3	30
Hash, meat and vegetables,	Warmed,	2	30
Sausage, fresh,	Broiled,	3	20
Heart, animal,	Fried,	4	
Tendon,	Boiled,	5	30
Cartilage,	"	4	15
Beans, pod,	"	2	30
Bread, wheat, fresh,	Baked,	3	30
" corn,	"	3	15
Cake, "	"	3	
" sponge,	"	2	30
Dumpling, apple,	Boiled,	3	
Apples, sour, hard,	Raw,	2	50
" " mellow,	"	2	
" sweet,	"	1	30
Parsnips,	Boiled,	2	30
Carrot, orange,	"	3	15
Beets,	"	3	45
Turnips, flat,	"	3	30
Potatoes, Irish,	"	3	30
" "	Roasted,	2	30
" "	Baked,	2	30
Cabbage, head,	Raw,	2	30
" with vinegar,	"	2	
"	Boiled,	4	30

97. The foregoing table, says Dr. Beaumont, from whose work it is derived, is formed from all the experiments made upon St. Martin, taking the average from such as were generally performed under the naturally healthy condition of the stomach, and ordinary exercise.

HEART AND PERICARDIUM.

98. The heart is a very strong muscle, which propels the blood through the arteries to every part of the body. It is situated in the left cavity of the chest, resting upon the diaphragm, and is contained in a strong membranous sac or bag, called the *pericardium*, which confines it to its proper position, and restrains its action if too violent. Its medium weight is said to be nine ounces in man, and eight ounces in woman. It occupies an oblique position in the chest, and is entirely covered by the lobes of the left lung, except a small portion of its apex or point, which strikes between the fifth and sixth ribs, a little to the left of the sternum or breast bone.

99. The heart is divided into four cavities, termed auricles and ventricles, and gives origin to the aorta and pulmonary artery, all of which will be explained hereafter, in speaking of the circulation of the blood. The action of the heart consists in its contraction and dilatation, and incredible as it may seem, the number of its contractions in twenty-four hours, in a healthy adult, is something more than *one hundred thousand*.

100. The *pericardium*, by which the heart is invested, is lubricated on the inside by a fluid, but does not contain water, as was formerly supposed by anatomists, except in a diseased state. According to Mr. Bell, there have been many curious speculations in regard to what was termed the *water of the pericardium*. Some said it was designed to cool the heart, and others, that it was intended to irritate the organ by its acrimony, and keep up its motions. "But of all the outrages against common sense and common decorum," says Mr. Bell, "the most singular was the dispute maintained among the contending parties, whether it was or was not the water of the pericardium which rushed out when our Saviour's side was pierced by a spear."*

101. Plato, in speaking of the heart, very prettily observes, "It is the centre or knot of the blood-vessels; the spring or fountain of the blood, which is carried impetuously round; the blood is the *pabulum* or food of the flesh; and for the purpose of nourishment, the body is laid out into canals, like those which are drawn through gardens, that the blood may be conveyed, as from a fountain, to every part of the body."

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* Anatomy and Physiology, 6th American edition.

ARTERIES.

102. The arteries are strong, elastic, membranous tubes, which arise from the heart by two trunks, and convey the blood by their innumerable branches to every part of the body. They are enveloped in sheaths of a loose cellular texture, which connect them with the adjacent parts, and enclose the veins, lymphatics, and nerves, by which they are usually accompanied. They are furnished with three coats, the *external* of which is thick, strong, and elastic, enabling it thereby to withstand the impulse of the blood sent from the heart. The *middle* or *muscular* coat is composed of yellow, circular fibres, which are said by some anatomists to have the power of contraction, though this is denied by others. The *inner* coat is smooth, polished, and easily torn. The density and firmness of its texture, says Mr. Bell, is for the purpose of retaining the blood, and its smoothness for permitting the blood to circulate with the least possible interruption.

FIG. 4.

An Artery and its Branches.

a, trunk; *b*, *b*, large branches into which it subdivides; *c*, *c*, *c*, small branches, diminishing gradually in size, and terminating in the capillaries, which form a fine or delicate net-work.

103. The blood which flows through an artery does not afford it any nourishment; consequently, its coats are perforated with smaller arteries, together with veins, by which its life or vitality is maintained.

104. The larger arteries are all deeply seated, and by this arrangement are protected from injury by accidents, while the veins, which do not involve the same serious consequences in case of wounds, are generally placed near the surface of the body.

105. The arteries are subject to enlargement, forming what are called aneurismal sacs or tumors; and they also, in some

cases, become ossified or converted into a bony substance, feeling under the fingers like indurated cords. This happens occasionally in old people.

CAPILLARIES.

106. The *capillaries* form the intermediate link between the arteries and veins, receiving the blood from the one, and transmitting it to the other. They are distributed over every part of the body, and constitute a complete net-work. So numerous are they indeed, that the point of the finest needle cannot be inserted into the skin without occasioning a flow of blood. The term *capillary*, as applied to these vessels, says Magendie, is altogether deficient in exactness. Compared with such tubes, he observes, a hair is a huge cylinder; the diameter of a hair bears about the same proportion to that of a capillary vessel, as the trunk of a tree does to the fibres of its roots. Some of them are too minute, in a state of health, for the admission of red blood, the globules of which are larger than the globules of white blood, but in inflammation their diameters are enlarged, and the red blood passes into them without difficulty, giving the part to which they belong a red appearance. We have an example of this in inflammation of the eye.

107. It has been decided that the movement of the blood through the capillaries, is influenced by the action of the heart, and that it becomes quiescent as soon as the heart ceases to contract. The capillaries, however, are not the extremities of the arteries, but minute branches from their sides, as is shown in Fig. 4.

108. The capillaries perform the function of nutrition; that is, they deposit the blood by which the body is nourished, and of which its various organs and tissues are formed. The stagnation of the blood in these vessels is the cause of inflammation; and, according to Dr. Marshall Hall, the "stagnation augments as the inflammation increases and becomes more diffused, seeming to constitute the essential character of the disease."* A similar obstruction in the capillaries produces the phenomenon of fever, which is named according to its location, or characteristic symptoms.

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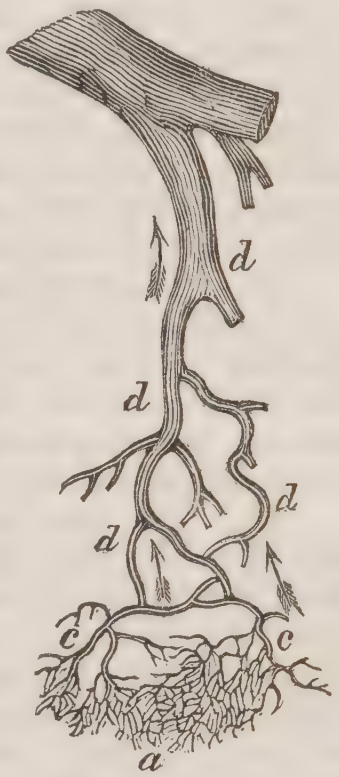
* Hall's Practice of Medicine, by Drs. Bigelow and Holmes, p. 115. Boston.

VEINS.

109. Having considered the arteries and capillaries, let us now take a brief survey of the veins, which constitute the last link in the great chain of blood-vessels.

110. The veins are those tubes which return the blood to the heart, after it has been sent out by the arteries. This is illustrated by the operation of bloodletting. The bandage is applied above the elbow so as to compress the veins, without at the same time compressing the deep-seated artery, and hence the blood readily flows from the orifice made by the lancet; but if the bandage should be tightened so as to compress the artery also, the flow of blood would immediately cease.

FIG. 5.



Capillaries uniting to form Veins.

a, capillaries; *c*, *c*, small branches of veins formed by the union of capillaries; *d*, *d*, *d*, *d*, larger branches, uniting to form a great trunk.

111. The veins are formed by the union of the capillaries, as is shown by the accompanying figure. They are similar in structure to the arteries, but their coats are thinner and more delicate. They are without pulsation. Unlike the arteries, they are furnished with numerous valves, which prevent any retrograde movement of the blood.

112. The veins throughout the body terminate in three principal trunks. These are the *vena cava superior*, the *vena cava inferior*, the *vena portæ*, and the *pulmonary vein*. The *superior cava* receives the blood from the upper parts of the body, and the *inferior cava* from the lower parts; and both empty their contents into the right auricle or chamber of the heart. The *vena portæ* collects the blood which circulates in the stomach, intestines, and other organs of the abdomen, and conveys it to the liver for the formation of bile. The *pulmonary vein*, which rises in the substance of the lungs by numerous capillary branches, returns the blood from these organs to the left auricle of the heart, as will be explained hereafter.

BLOOD.

113. The blood is that fluid which is formed from the chyle, and circulates in the heart, arteries, capillaries, and veins. It is

of a viscid consistence, and somewhat saltish taste. In the arteries it is of a light vermilion hue, but in the veins, with the exception of those which transmit it from the lungs to the heart, it is of a darkish color. The quantity in the body of an adult, is estimated at from twenty-five to thirty pounds, three-fourths of which is supposed to be in the veins, and one-fourth in the arteries. Its temperature is about 100 degrees of Fahrenheit. This however is in the arteries, for it is said to be one degree colder in the veins. It rises above this standard in some diseases, and sinks below it in others. In scarlet fever, the blood has indicated a temperature of 105 and even 110 degrees, and in the Asiatic cholera, as remarkable as it may seem, it has sunk as low in the thermometrical scale as 70 degrees. It was a remarkable conceit of Lord Bacon, that the heat of the blood tended to exhaust the strength of the body; and he suggested that if it was cooled by nitre, life might be prolonged to an indefinite period.

114. The temperature of the blood varies in different animals, and hence they are divided into the *warm-blooded*, and the *cold-blooded*. In the first, which includes man, quadrupeds, and birds, the blood is hotter than the medium they inhabit; while in the second, including fishes, and reptiles, the blood is nearly of the same temperature as the surrounding medium.

115. The blood is the most important fluid in the body, and has been very justly termed the *pabulum* of life. It is the sole material of which every part of the human machine is formed, not even excepting the bones. It furnishes the various secretions, as bile, pancreatic juice, saliva, and urine, and is the source of animal heat, diffusing warmth throughout the system, and maintaining the temperature of the body, notwithstanding the extremes of heat and cold, at a uniform standard. Mr. Hunter, who attributed a vital principle to the blood, observed, that "not only is it alive in itself, but it seems to carry life everywhere."

116. Examined with a microscope of a sufficiently magnifying power, the blood is found to contain an immense number of red globules, which glide over each other in every direction, and contain the coloring matter of this fluid.

117. When blood is drawn from the body, and allowed to rest, it separates into two parts, one of which is solid, and the other liquid. The first is the *clot* or *crassamentum*, and the other the *serum*. The clot is of a thick or jelly-like consistence. It contains the red globules, and is therefore of a corresponding color. Upon being washed, the coloring matter disappears, and a whitish substance remains, which is variously called *gluten*, *coagulable lymph*, *adhesive matter*, and *fibrine*. The latter however is the name most commonly used. It is this substance which is

thrown out in wounds, and causes parts which have been separated to adhere. It plays an important part in the animal economy, and is the principal material of which the muscles are formed. It is more abundant in healthy, vigorous persons, than those who are laboring under disease.

118. The *serum* is a transparent liquid, bordering upon a yellowish hue, and is said to constitute one fifth or one fourth of the blood, in a healthy state of the body. Its use, says Mr. Hunter, is probably to keep the red globules suspended and undissolved, for it is found in the largest quantity where the globules are the most abundant. It is also intended, he says, to suspend and dissolve any foreign substances in the blood, whether they are of use to the body, or otherwise, acting upon them as a common solvent.

119. In diseases generally, there is an increase of serum, and a diminution of fibrine, the latter of which, as I have already said, is the most essential part of the blood. Magendie has demonstrated that blood-letting will give rise to a morbid increase of serum, and thereby favor the development of violent inflammatory disorders, where none previously existed.

DIAPHRAGM.

120. The *diaphragm* or *midrif* is a thin muscular partition between the chest and the abdomen, and is attached at its circumference to the spine, lower or inferior ribs, and sternum or breast bone. (See plates I. and II. of the *skeleton*, following page 4.) It rises upward within the chest and forms an arch, having the lungs in contact with its upper surface, and the liver and stomach with its lower surface, the two latter organs accommodating themselves to its concavity. It is perforated by the œsophagus or gullet, through which the food passes into the stomach, and by several important vessels, among which is the aorta or great artery of the body.

121. The diaphragm is the principal agent in respiration. When it contracts, it loses its roundness or convexity, and descends to form a *plane* or level surface. This enlarges the cavity of the chest, and the lungs following the diaphragm in its descent, causes a vacuum in these organs, which is immediately filled by air rushing in through the windpipe or trachea. This is termed *inspiration*. The diaphragm now becomes relaxed, and is pushed up by the organs within the abdomen, giving it a roundness or convexity on the upper side, as already stated, which diminishes the size of the chest, and causes a portion of the air within the lungs to be expelled. This is called *expiration*. An enlargement of the chest therefore, is accompanied with *inspiration*, and a contraction of it with *expiration*. In the first, the diaphragm

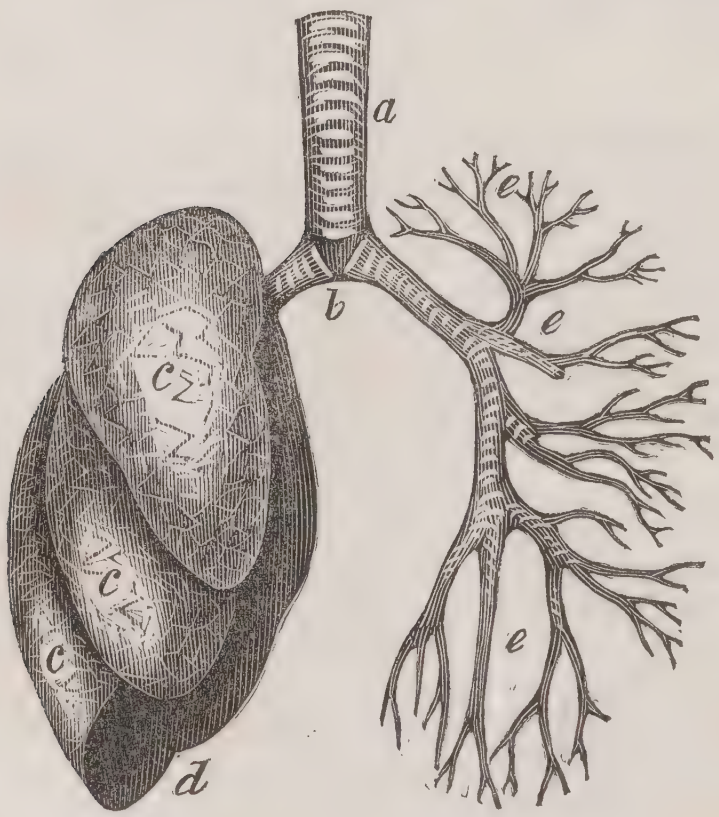
is contracted, and becomes a *plane;* and in the second, it is relaxed and pushed up by the abdominal viscera.

LUNGS.

122. The lungs are soft, spongy bodies, occupying the cavity of the chest or thorax, and are attached to the neck by means of the trachea or windpipe. They consist of two portions, denominated *right* and *left*, which are separated from each other by a membranous curtain called the *mediastinum*. This curtain stretches from the spine to the sternum, and divides the chest into two cavities. There is no communication between the right and left lungs therefore, except through the medium of the windpipe, which is common to them both.

123. The shape of these organs corresponds with the cavity in which they are placed, being rounded next the ribs, and hollow or concave where they rest on the arch of the diaphragm. In

FIG. 6.



View of the right Lung, and Air Passages of the left Lung.

a, trachea or windpipe; *b*, right and left bronchia; *c*, *c*, *c*, the three lobes of the right lung; *d*, the inferior or concave surface of the right lung, which rests upon the arch of the diaphragm; *e*, *e*, *e*, air passages of the left lung or division and subdivision of the bronchia.

color they vary according to the age of the individual. In children they are reddish, in adults grayish, and in old age purple or livid. The membrane called the *pleura*, which lines the inside of the chest, is reflected upon the lungs, and forms their external coat or covering. In the one case, it is termed *pleura costalis*, and in the other, *pleura pulmonalis*. The right lung is the largest, and is divided into three lobes ; the left lung is divided into two lobes, between which, the heart and its surrounding membrane the pericardium, are situated.

124. The windpipe, through which the air passes into the lungs, divides into two lateral branches, denominated *bronchia*, as is represented in the preceding figure, and the bronchia, again, divide and subdivide into an immense number of little tubes, constituting the *air passages* of the lungs, which gradually diminish in size, and finally terminate in what are termed the *air cells*. These cells are small, and communicate freely with each other. They are lined with a delicate mucous membrane, which is plentifully supplied with minute blood-vessels. This membrane is continued throughout the air passages, and is estimated by Keill to be equal in extent to 21,906 square inches. Hence it will be seen that the lungs are capable of containing a large amount of air. The quantity which enters at each *inspiration*, is said to be about 40 cubic inches, and an equal quantity is given out at every *expiration*. Thus, if there are 20 inspirations in a minute, which are rather more than the average number, the quantity of air that would enter and pass out in this time, would be 800 cubic inches, and in the same ratio it would amount to 48,000 cubic inches in an hour.

125. The circulation of the blood through the lungs, is carried on by means of arteries, capillaries, and veins, as in other parts of the body. The heart first propels it into the arteries, and then it passes successively into the capillaries and veins. The latter terminate in four large trunks, which enter the heart on the left side, as will be hereafter explained. While the blood is moving through the capillaries, it is acted upon by the air through the medium of the delicate membrane which lines the air cells, and is changed from the dark color which it has in the veins to a bright vermilion hue ; or, in other words, it is converted from *venous* to *arterial blood*, and thereby fitted to nourish and sustain the body. But for this change, an individual could not long exist. The blood, after having circulated in the veins, is unfit for the support of life until it has received the *vitalizing* influence of the air in the lungs, when it is immediately changed in its character, and adapted to the peculiar wants of the system. This is made manifest by experiments on animals. Let a bird be confined, for instance, in a tight

glass jar, full of air, and at first it will exhibit no signs of inconvenience, but in a short time it will begin to pant for breath, and ultimately die in convulsions. A regular supply of pure fresh air, therefore, is indispensable to the maintenance of life, and this fact should be kept prominently in view in the treatment of the sick, taking care not to confine them in narrow, or ill-ventilated rooms.

126. The atmospheric air undergoes important chemical changes in the lungs. The oxygen, or vital part of the air, is absorbed by the blood, and in its stead an equal quantity of carbonic acid gas is given out in breathing, together with a quantity of watery vapor. Thus, by a remarkable process, the blood is freed from two noxious principles, water and carbon, and furnished with oxygen, upon which its vitality depends, and which appears to be intimately connected with the generation of animal heat.

127. The mucous membrane, lining the internal surface of the lungs, is the seat of various disorders, as croup, influenza, and hooping-cough. It performs the function also of absorption, and takes up the fumes of spirits, and other volatile substances. The former have been absorbed to the extent of producing intoxication.

CIRCULATION OF THE BLOOD.

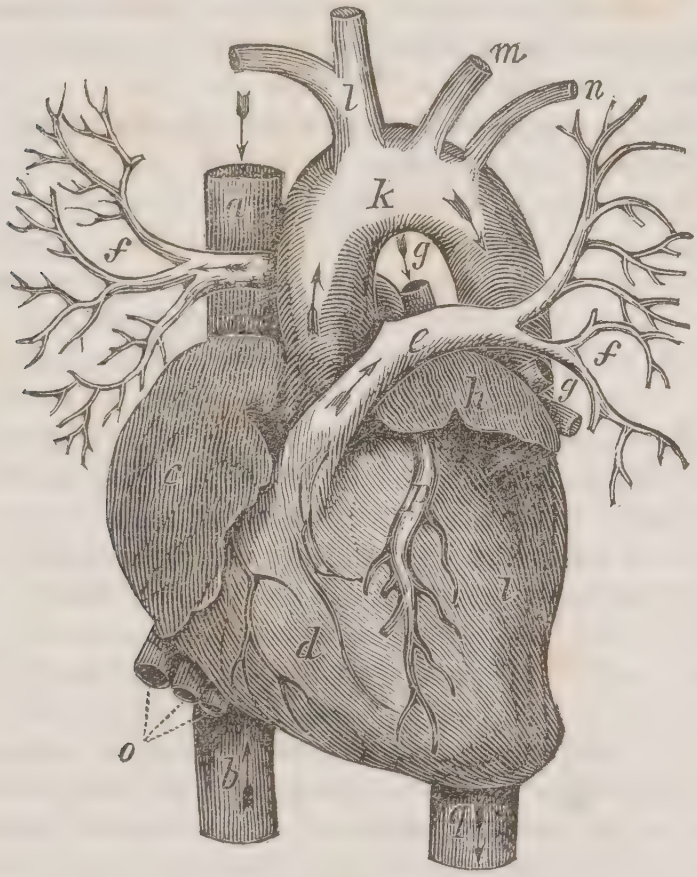
128. Extraordinary as it may seem, the circulation of the blood was not discovered until about two centuries and a quarter ago, when it was first promulgated by William Harvey, an eminent English physician. Instead of receiving the meed of praise from his professional brethren, however, for this brilliant triumph of his genius, he was violently persecuted by them ; and in consequence of their opposition, he was obliged to retire to an obscure corner of London, where he lost nearly the whole of his practice. So strong is the force of prejudice, says Dr. Dunglison, and so difficult is it to discard preconceived notions, that it was remarked by Hume, in his History of England, that no physician in Europe, who had reached forty years of age, ever, to the end of his existence, adopted Harvey's doctrine of the circulation.*

129. The accompanying figure has been selected to give some idea of the circulation. The heart has already been described as having four cavities, (98) two of which are auricles,

* Human Physiology, 3d edition, vol. ii. p. 156.

and two ventricles. The blood, after it has circulated in the veins, and is no longer fit for the support of life, is received by the two great venous trunks, *a* and *b*, and emptied into the right auricle *c*.

FIG. 7.



View of the Heart.

a, superior vena cava; *b*, inferior vena cava; *c*, right auricle; *d*, right ventricle; *e*, pulmonary artery; *f*, *f*, its right and left branches going to the lungs; *g*, *g*, pulmonary veins, which return the blood from the lungs to the heart; *h*, left auricle, into which the pulmonary veins empty their contents; *i*, right ventricle; *k*, aorta or great artery, which rises out of the right ventricle, and conveys the blood, by its numerous ramifications, to every part of the body; *l*, arteria innominata, dividing into the right carotid and right subclavian arteries, the former going to the right side of the head, and the latter to the right arm; *m*, the left carotid artery, going to the left side of the head; *n*, left subclavian artery, going to the left arm; *o*, veins returning the blood from the liver, spleen, and bowels, into the inferior vena cava, by which it is poured into the right auricle *c*; *p*, coronary artery, which supplies the heart with blood for its nourishment; *q*, the aorta, descending into the abdomen, where it divides into two branches, one going to the right extremity, and the other to the left.

The stimulus of the blood in the auricle causes it to contract, and thus the blood is forced into the right ventricle *d*. The ventricle in its turn contracts, and sends the blood into the lungs through

the pulmonary artery *e*, which divides into right and left branches. While in the lungs, the blood is acted upon by the atmospheric air, which frees it from its impurities, and gives it a bright red color. It is then collected by the pulmonary veins, and deposited in the left auricle *h*, from which it passes into the left ventricle *i*, and thus, by a forcible contraction, drives the blood into the aorta, through which, and its numerous branches, it is sent to every part of the body.

130. The two auricles contract and dilate together; and so of the two ventricles. Between the auricle and ventricle on the right side of the heart, the *tricusped valve* is placed to prevent a reflux of the blood; and between the auricle and ventricle on the left side, the *mitral valve* is situated for a similar purpose. The pulmonary artery and aorta also, are furnished with *semi-lunar valves* at their orifices, to prevent the blood from returning into the ventricles.

131. The cavities of the heart are not all filled at the same time, as may be readily supposed. The auricles are filled simultaneously, while the ventricles are empty, and vice versa. At every stroke of the heart, it is estimated that it forces two ounces of blood into the aorta, and if it contracts at the rate of sixty times a minute, it would only require about two minutes and a half for all the blood in the body to pass through this wonderful organ.

132. Mr. Bell, in his remarks on Harvey's doctrines of the circulation, and the violent opposition that was made to them by the medical profession, observes, "What new, strange, monstrous, and impossible circles his antagonists contrived for the blood, it were tedious to relate : but it is most natural to mention *why his doctrines were opposed.* It was the universal opinion in those days, that the blood was formed in the liver, and sent out from it by all the veins to nourish the body, proceeding outwards during the day, and returning by night. The old physicians had thus entered into a train of thinking which it was not easy to change : these notions about the blood were become great and important doctrines, and had descended to them from their oldest teachers, with many weighty dependencies, conclusions, and rules of practice issuing from them : they were as articles of faith which it was a heresy to forsake ; and it was easy to foresee, that should the Harveian doctrine prevail—should it be once completely proved that the blood moved outwards along the arteries, and returned by the veins ; then all the reasonings of the physicians would be confounded ; their theories embracing the whole body of physic disturbed ; their system of practice entirely overthrown ; and all they had written themselves, and all the ancient

books which they had read with so much diligence (for they were really learned ;) all that they had ever been proud of, was to be wiped out from the thoughts of that and all succeeding ages !"

133. "But the doctrines of Harvey," continues the same writer, "did at last prevail, dispelling those idle dreams of humors, and temperaments, and spirits, and blood !—of the blood concocted in the liver, and moving outwards along the veins to nourish the body ; of the blood moving outwards during all the day, and returning by night ; of the arteries carrying air only or vital spirits, to animate the system by mixing with the blood, while the veins alone conveyed the proper blood."*

ANIMAL HEAT.

134. From the tendency of heat or caloric to an equilibrium, inanimate substances acquire the temperature of the air by which they are surrounded, or of other bodies with which they are in contact; but it is not so with man, for he has a temperature independent of the medium in which he lives, and this he is capable of maintaining either in a hot or cold climate, so long as he enjoys his health. Hence the term *animal* or *vital heat*, which in the human subject, is about 100 degrees of Fahrenheit.

135. With regard to the source of animal heat, physiologists are yet undecided, and it would be useless to burthen these pages with an elaborate treatise on the subject. Writers admit however, that its production is intimately connected with the breathing process; and this is obviously true. In the first place, it is always the greatest in those animals who have the most perfectly developed lungs, as birds, in whom we find a temperature greatly exceeding that of man. Again, if the lungs are impaired in their functions, so that the blood does not circulate freely through them, a loss of heat is the consequence. Dr. Combe, in his Principles of Physiology, observes, "Many persons with imperfectly developed lungs, and a predisposition to consumption, complain habitually of coldness of the surface and feet; and many who were previously in good health, become more and more sensible to cold, in proportion as the approach of disease weakens the functions of the lungs."

136. "The quantity and quality of the food and state of the digestive functions," observes the same writer, "are important conditions in the production of animal heat. This will be readily

* Bell's Anatomy and Physiology, 6th American edition.

assented to, when the reader considers that a due supply of well formed chyle is required to restore the nourishing properties of the blood, and if, in consequence either of insufficient food or of weak digestion, this be rendered impossible, all the animal functions, among others the production of animal heat, must necessarily be impaired. This is the reason why cold is felt most severely in the morning before breakfast, and why coldness of the feet and chilliness of the surface are so generally complained of in indigestion and bilious complaints."

137. Dr. Ure, in his Chemical Dictionary, considers respiration as the principal, or at least the most evident source of animal heat. Experience demonstrates, he says, that the heat of the blood increases nearly a degree in traversing the lungs; and as it is distributed to all parts of the body from the lungs, it carries the heat everywhere into the organs; for we have seen that the heat of the veins is less than that of the arteries. But in what peculiar manner does respiration tend to the development of animal heat? Mr. Edwards and others, attribute it to the influence of oxygen, which is absorbed by the blood in the lungs, and which, it is said, combines with the carbon of the blood in the arteries, thereby giving rise to an evolution of heat. Mr. Edwards, in support of his doctrine, remarks, that the greater the temperature of an animal, and the nearer to the adult age, the greater is the amount of oxygen which it consumes. Objections, however, have been urged against the theory of Mr. Edwards, and against every other theory that has been proposed, so that it is impossible to arrive at any definite conclusions on the subject. It is generally conceded, however, that oxygen plays an important part in the production of animal heat. If blood fresh from the veins be introduced into a vessel filled with this gas, it not only assumes a vermilion color, but its temperature is also elevated ; and there is no reason why oxygen absorbed by the blood in the lungs should not produce a similar result.

NERVOUS SYSTEM.

138. This consists of the brain, spinal marrow, and nerves.

139. Brain. This organ is contained within the skull, and is the seat of the intellectual faculties. It is divided into two parts, the *cerebrum* or great brain, and the *cerebellum* or little brain. The first is situated above the level of the ears, and the second below that level, in the lower and back part of the head. It does not consist exclusively of a pulpy substance, resembling

marrow, as was formerly supposed by anatomists, but it also has a fibrous structure, as has been demonstrated within the last thirty years by Gall and Spurzheim. It is surrounded by three membranes, called *dura mater*, *tunica arachnoides*, and *pia mater*. The *dura mater* is in contact with the inner surface of the skull, and is a dense, strong membrane, having a bright, silvery appearance. The *tunica arachnoides* is thin and delicate. The *pia mater* immediately surrounds the brain, and is copiously supplied with blood-vessels. The brain is the seat of sensation as well as of intellect, and the connection between it and other parts of the body is maintained by means of the nerves and spinal marrow.

140. The brain is liable to various diseases, as inflammation, dropsy, and apoplexy.

141. Spinal Marrow. This is a continuation of the base of the brain, and is contained within the cavity of the spine. It is round, and larger at the top than the bottom. It descends as low as the third vertebra of the loins, where it terminates in a bundle of nerves, which has a fancied resemblance to the tail of a horse. It is similar in structure to the brain, consisting of a pulpy or medullary matter, which is covered by a continuation of the pia mater, tunica arachnoides, and dura mater.

142. Nerves. The nerves are long white cords of various sizes, which originate in the brain and spinal marrow, or rather are prolongations of these organs, and are distributed in every direction through the body. They communicate with each other like the blood-vessels, forming an extensive net-work; and so numerous are they in their ultimate ramifications, that it is impossible to prick the skin or flesh, with the finest needle, without wounding one or more of their branches.

143. The great attributes of the nervous system, says Mr. Bell, in his Anatomy and Physiology, are, the capacity of receiving impressions, the endowment of thought and feeling, and the power of putting the muscular machine into action. The nerves, however, cannot act independent of the brain. This is proved in various ways. If the nerve proceeding to any sensible part be cut, that part will lose its sensibility, because the communication between it and the brain is destroyed. Every sensation, says Dr. Dunglison, whatever may be its nature, requires the intervention of the brain. Light may make an impression on the eye, or sound on the ear, but it is not until this impression has been transmitted to the brain, that sensation is effected. Again, if the skull is fractured so as to compress the brain, all consciousness is lost until the compression is removed. Somewhat analo-

gous to this, is the effect produced by *narcotics*, which are administered by the old school physicians for the temporary relief of pain; but these poisons, instead of removing the cause of the complaint, only stupify the brain, and render it incapable of receiving impressions from the nerves. The remedy therefore, is worse than the disease, and cannot be employed without the risk of injuring the patient's constitution, or perhaps destroying his life.

144. The various organs of the body are supplied with nerves, which are indispensable to the healthy performance of their functions. For instance, if the nerves which are distributed to the stomach were cut, the process of digestion in that organ would be arrested. The heart would cease to contract if its nerves were divided, for it is through these channels that it is acted upon by the brain. But for these mysterious cords, which link the various parts of the body in the closest sympathy, we could neither behold objects, hear sounds, taste food, nor exercise any of the senses.

145. The nerves are divided into the *sensible* and *insensible;* the *voluntary* and *involuntary*. The first convey sensibility to the parts to which they are distributed, as the nerves of the skin; the second, like the brain itself, are devoid of sensibility, and exhibit no pain when irritated. Of this class are the *optic* and *auditory* nerves, which, however, are capable of being acted upon by light and sound. The *voluntary nerves* are distributed to muscles which are called into action by an effort of the will, as those of the leg or arm. Consequently, they are the nerves of motion. The *involuntary nerves* are not under the immediate influence of the will, and perform their functions without our consciousness. The nerves of the stomach and bowels belong to the latter denomination.

146. *Spinal Nerves.* These are given off from the spinal marrow, and are thirty in number. They issue through lateral openings between the vetebræ, and are distributed to various organs. They are called *cervical*, *dorsal*, *lumbar*, and *sacral* nerves, according to the part of the vertebral column from which they proceed.

147. *Nerves of the Brain.* The brain gives off nine pairs of nerves, which are arranged by anatomists in the following order. First, the *olfactory* or nerves of smell. Second, the *optic nerves*, which are appropriated to the sense of sight, and which form the internal coat of the eye. The third and fourth pairs are distribu-

ted to muscles of the eye, and influence its motions. The fifth pair, called *trigemini*, send branches to the forehead, nose, upper and lower jaws, palate, throat, and other parts. The sixth pair, beside going to the eye, send off a branch which unites with one from the fifth pair, thereby forming the *great sympathetic nerve*. The seventh pair are the *auditory* or nerves of hearing. The eighth pair or *par vagum* give off numerous branches, which go to the throat, windpipe, lungs, heart, stomach, liver, spleen and kidneys. The ninth pair or *lingual nerves* go to the tongue.

148. Great Sympathetic Nerve. This nerve is so called from its numerous connections with other parts of the body. It arises, as we have seen, from a branch of the sixth and one from the fifth pair, which unite into one trunk, and descend along the spine to the lower end of the sacrum or termination of the spinal column. It communicates with each of the spinal nerves, and with several of the nerves of the brain, and sends off branches to the organs contained within the chest and abdomen. The uses of this nerve, according to Lobstein, are, 1. To preside over nutrition, secretion, the action of the heart, and the circulation of the blood; 2. To maintain a communication between different organs of the body; and, 3. To be the connecting medium between the brain and abdominal viscera.

PART SECOND.

GLANCE

AT THE

OLD SCHOOL PRACTICE OF PHYSIC.

GENERAL REMARKS.

149. There is nothing which has contributed more to our present physical deterioration, than the old school practice of physic. The moment an individual begins to dose himself with poison, even though he should take it from the hand of a diplomatised physician, he impairs his health, and inflicts an injury upon his constitution. Under these circumstances, if it should be his lot to rear a family, he transmits his own infirmities to his children, and they become the victims of early disease. Thus it is that our country is filled, from one extreme to the other, with the sick, lame, blind, feeble, and emaciated, who have no hope of a termination of their sufferings, but in the embrace of death. Our luxurious habits have no doubt done much in rendering our physical condition what it now is, but a much more fruitful source of mischief is to be found in blood-letting, and the employment of mineral and vegetable poisons. Dr. Rush has said, "We have assisted in multiplying diseases; we have done more—we have increased their mortality." Of the truth of this there can be no doubt; and though Dr. Rush was an advocate of the "heroic practice," he had sagacity enough to discover that it was founded upon erroneous principles.

150. There are many facts which go to prove that diseases are multiplied by the use of poisonous drugs. In a history of the

New Zealanders, published somewhat recently in Boston, as a part of the Library of Entertaining Knowledge, it is said of these people that they believe in the existence of a malignant demon, named *Atua*, who is the cause of all their misfortunes; and, of late years, "they have suspected that he has been very angry with them for having allowed the white men to obtain a footing in their country—a proof of which they think they see in the great mortality that has recently prevailed among them. This, however, they attribute at other times to the God of the Christians, whom they also denounce as a cruel being, at least to the New Zealanders. Sometimes they more naturally assign as its cause, the diseases that have been introduced among them by the whites. Until the whites came to their country, they say, young people did not die, but all lived to be so old as to be obliged to creep on their hands and knees."*

151. The present condition of the New Zealanders, so far as their health is concerned, is very different from what it was when they were visited by Capt. Cook. It is mentioned in the life of that hardy and enterprising navigator, that, "one circumstance peculiarly worthy of notice, is their perfect and uninterrupted health. In all the visits made to their towns, where old and young, men and women, crowded about our voyagers, they never observed a single person who appeared to have any bodily complaint; nor among the numbers that were seen naked, was once perceived the slightest eruption upon the skin, or the least mark which indicated that such an eruption had formerly existed. Another proof of the health of these people, is the facility with which the wounds they at any time receive, are healed. In the case of a man who had been shot with a musket ball through the fleshy part of his arm, the wound seemed to be so well digested, and in so fair a way of being perfectly healed, that if Mr. Cook had not known that no application had been made to it, he declared that he should have enquired, with a very interested curiosity, after the vulnerary herbs and surgical art of the country. An additional evidence of human nature being untainted with disease in New Zealand, is the great number of old men with whom it abounds. Many of them, by the loss of their hair and teeth, appeared to be very ancient, and yet none of them were decrepit. Although they were not equal to the young in muscular strength, they did not come in the least behind them with regard to cheerfulness and vivacity. Water, as far as our navigators could discern, was the universal and only liquor of the New Zealanders."†

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* New Zealanders, p. 231.

† Kippis's Life of Captain Cook, pp. 122, 123.

152. It does not appear, from the testimony of travellers, that disease prevailed to much extent among the North American Indians, until the white people taught them the use of poisons. Major Long, in the account which he has given of his expedition to the Rocky Mountains, says that rheumatism is rare among them. No case of consumption, or jaundice, fell under his observation. Decayed teeth were rare. Baldness seemed to be almost unknown, the hair being always retained, however advanced the age of the individual. Dysentery, fever, and ague and fever, were exceedingly rare. Hypochondria, so far as he observed, was unknown. He did not notice any one of them with his eye deviating from the true line of vision ; and what was very remarkable, their skin was not known to have been acted upon by poisonous plants. Within the last ten or fifteen years, however, since they have accustomed themselves to the use of calomel, and other poisons, which they obtain from the whites, their diseases have multiplied, and they do not any longer experience the same strength of body, or vigor of constitution.

153. An interesting anecdote is related by the celebrated Montaigne, which is worthy of special attention. He mentions that he had the patronage of a benefice, at the foot of one of the Gascon mountains, where the inhabitants lived after a manner of their own, and were governed by certain laws and regulations which had descended from father to son, and to which they consented to pay obedience. They had no judges, lawyers, doctors, nor beggars, nor were they ever obliged to call in a stranger to settle their disputes. They avoided very scrupulously all connection with the other parts of France, to keep their minds in the utmost state of purity. At length, however, a physician took it into his head to marry a young woman of their village, and live among them. He began by teaching them that there were such things as fevers, rheums, and imposthumes, and in what part of the human body the heart, liver, and intestines were placed, of which, till then, they were in perfect ignorance; and instead of garlic, with which they had been accustomed to cure all their diseases, however violent and dangerous, he ordered them for a cough, or an indigestion, some strange foreign mixtures, and began to make a trade not only of their healths, but their lives. Until this time they never observed that being out at night in the dew gave them headachs, that it was unwholesome to eat or drink any thing warm, or that the winds of autumn were more unwholesome than those of the spring; but after making use of the medicines introduced by him, they were beset by a whole legion of diseases to which they had never been accustomed; they not only perceived a general

falling off of their ancient vigor, but they discovered also that their lives were shortened by at least one half.

154. A useful lesson might be learned from the anecdote of Montaigne, for people rarely reflect that their diseases are often occasioned by following the advice of their physicians. A single dose of a poisonous substance will sometimes lay the foundation of an obstinate and dangerous malady. A medical man residing in a small town on the borders of the river Delaware, above Philadelphia, used to recommend to the people in his vicinity to take one or two calomel powders as the autumn approached, to guard against bilious attacks, and keep the liver in a "healthy state." Many followed his advice, but they were nevertheless more sickly than their neighbors; and at the end of each year they had enormous fees to pay for medical attendance. The physician rode in his carriage, and erected a splendid mansion; but the people who had helped him to these comforts and elegancies, little suspected that he had been making a trade, as Montaigne expresses it, of their healths and lives.

155. The reflection must force itself on every candid mind, that the medical faculty are incapable of removing disease with any degree of certainty, or they would receive a greater degree of public confidence than has ever yet been accorded to them; indeed, people generally seem to regard them with an instinctive horror, and some of our most intelligent and sagacious men, whose judgments are not swayed by narrow minded prejudices, have frankly and openly declared that they had no confidence in the skill of the medical fraternity. It is stated in one of our prominent medical journals, that Bolingbroke and Walpole, the two most powerful geniuses of their time, fell victims to medical quackery; that is, they had no confidence in the *diplomatised physicians*, and were willing to trust their lives in the hands of those who were without *diplomas*.

156. One of the crowned heads of Europe sent to this country a few years ago for Mr. Swaim, the inventor of a secret nostrum, to cure him of the scrofula, which the most distinguished European physicians had been unable to remove.

157. Sir Walter Scott observes of Napoleon, that he never obeyed the medical injunctions of his physician, Dr. O'Meara. He obstinately refused to take medicine, notwithstanding all the persuasion that was employed, even when it was supposed that his disease would prove speedily fatal. He held many disputes with his medical attendant on the subject of physic, and one day answered his reasoning and arguments thus: "Doctor, no physicing. We are, as I already told you, a machine made to live. We are organized for that purpose, and such is our nature. *Do not counteract the living principle.* Let it alone—leave it the liberty of

defending itself—it will do better than your drugs. The watchmaker cannot open it; and must, on handling it, grope his way blindfolded and at random. For once that he assists and relieves it by dint of tormenting it with his crooked instruments, he injures it ten times, and at last destroys it."*

158. Why was Napoleon so averse to medical treatment, but that he had seen the ill effects of it in his court and camp? He was always surrounded by distinguished medical men, and if he had found them able to cure disease, he would have felt no reluctance in employing them in his own case. But, no; his slaughtered troops on the field of battle, were scarcely equal, perhaps, to those who died in the hands of the physicians and surgeons after the conflict was over, and he was convinced that their prescriptions could be of no avail—that they would, in fact, add to the violence of his symptoms, and in all probability hasten his death. Napoleon was a shrewd observer, and if he had been a physician instead of a warrior, he would no doubt have introduced many salutary reforms into the healing art, and divested it of many of its gross and palpable absurdities. His single assertion, "Do not counteract the living principle," speaks a volume of itself, and shows how well he was convinced that poisonous or deleterious substances, have no other effect than to derange the health, and impair the constitution. In stomach complaints, to which he was liable, says Sir Walter Scott, abstinence was his chief resource, and the bath was frequently resorted to when the pangs became more acute. He also held it expedient to change the character of his way of living when afflicted with illness. If he had been sedentery, he rode hard and took violent exercise; and if, on the contrary, he had been taking more exercise than usual, he was accustomed to lay it aside for prolonged repose.

159. Thomas Jefferson, the statesman and philosopher, who had opportunities for becoming well acquainted with the fashionable practice of medicine, does not speak of it in terms of favor, or even respect. "From the scanty field of what is known," says he, "the adventurous physician launches into the boundless regions of what is unknown. * * * I have lived to see the disciples of Hoffman, Boerhaave, Stahl, Cullen, Brown, succeed one another like the shifting figures of the magic lantern, and their fancies, like the dresses of the annual doll-babies from Paris, becoming from their novelty the vogue of the day, and yielding to the next novelty their ephemeral favors. The patient, treated on the fashionable theory, sometimes recovers in spite of the medicine. The medicine therefore restored him, and the doctor re-

* Scott's Life of Napoleon, 3 vols. in one, p. 368.

ceives new courage to proceed in his bold experiments on the lives of his fellow-creatures." In another paragraph Mr. Jefferson remarks, "I wish to see an abandonment of hypotheses, for sober facts, the first degree of value set on clinical observations, and the lowest on visionary theories."*

160. The Rev. John Wesley, so much famed for his enthusiastic devotion to the cause of piety and religion, was no friend to the fashionable and speculative practice of physic. It would afford me pleasure to quote somewhat at length from the writings of this excellent man, but my limits compel me to rest content with a few brief extracts. He observes, "As theories increased, simple medicines were more and more disregarded and disused; till, in a course of years, the greater part of them were forgotten, at least in the politer nations. In the room of these, abundance of new ones were introduced by reasoning, speculative men; and these more and more difficult to be applied, as being more remote from common observation. Hence rules for the application of these, and medical books, were immensely multiplied; till, at length, physic became an abstruse science, quite out of the reach of ordinary men."

161. "Physicians," says Mr. Wesley, "endeavored to keep the people in ignorance of the healing art, by filling their writings with abundance of technical terms, utterly unintelligible to plain men; and those who understood only how to restore the sick to health, they branded with the name of empirics. * * * They introduced into practice abundance of compound medicines, which consisted of so many ingredients, that it was scarcely possible for common people to know which it was that wrought the cure; abundance of exotics, neither the nature nor names of which their own countrymen understood; of chemicals, such as they neither had skill, nor fortune, nor time to prepare; yea, and of dangerous ones, such as they could not use, without hazarding life, but by the advice of a physician."

162. Mr. Wesley says there have been "some lovers of mankind, who have endeavored, contrary to their own interests, to reduce the healing art to its ancient standard; to explode it of all hypotheses and fine-spun theories, and make it a plain and intelligible thing, as it was in the beginning, having no more mystery than this—*Such a medicine cures such a disease.*" He commends Dr. Cheyne for his labors in this respect, and says that he would have communicated much more valuable information to the public, but that he stood in awe of his medical brethren. In proof of this he relates, that Dr. Cheyne was taken to task one day for

* Extract of a letter from Thomas Jefferson to Dr. Wistar.

passages in his works *countenancing* the modern practice of physic, and he replied to the individual who accosted him, "Oh, sir, we must do something to oblige the faculty, or they will tear us in pieces."

163. "Experience shows," says Mr. Wesley, "that one thing will cure most disorders as well as twenty put together;" and he then asks why so many ingredients should be employed, as are by the physicians. He answers the question by remarking, "only to swell the apothecary's bill; nay, possibly, on purpose to prolong the distemper, that the doctor and he may divide the spoils."

OPINIONS OF MAGENDIE.

164. No man is more distinguished as a medical philosopher than Magendie, the celebrated French physiologist, and no one has been more severe in his denunciations of the profession to which he is attached by interest, as well as inclination. In his Lectures on the Blood, delivered at the College of France in 1837-8,* he spoke with a fearless independence of his medical brethren, and applied to them the lash of censure with an unsparing hand. He says, "Medical men may be divided into two classes; those forming the first, give up all study the moment they leave off attending lectures; they quite conscientiously believe, and frequently succeed in persuading others, that they understand every disease, and can cure every variety of suffering; these gentry occasionally realize a handsome fortune, but I must say they do it at the expense of science and of the interests of their fellow-men. * * * The second class of practitioners continue, it is true, to follow clinical pursuits with zeal, but some among them, misled by scholastic errors, retard rather than accelerate the progress of the science."

165. "I hesitate not to declare, no matter how sorely I shall wound our vanity," continues Magendie, "that so great is our ignorance of the real nature of the physiological disorders called diseases, that it would, perhaps, be better to do nothing, and resign the complaint we are called on to treat, to the resources of nature, than to act, as we are frequently compelled to do, without knowing the why or wherefore of our conduct, and at the obvious risk of hastening the end of the patient."

166. Addressing his class on the subject of medical theories, he remarks, "Your chemical studies in the hospitals, and more

* Published in this country since that time in the Select Medical Library. Philadelphia, 1839.

especially the events of your own practice, must have supplied you with abundance of evidence of the emptiness of past and present theories."

167. "I would ask," says he, "wherein lies the difference between the medical practitioner and the nurse, at the sick bed? Suppose them, for example, engaged with a case of small pox. In the course of his studies, the physician has attended clinical practice, and has learned the symptoms and terminations of that disease; he knows admirably well, that it is ushered in by certain general phenomena, which are followed by a peculiar eruption of a certain duration; that the pustules formed dry, and that desquamation (peeling off of the cuticle) closes the scene. Very true; but do you imagine the nurse, provided she be habituated to her calling, does not know all that quite as well as he? Will he be able to tell a whit more correctly than she, why the case of small pox before him will prove confluent or benign? or why the skin, suddenly assuming a purple color, the sufferer is carried off in a few hours? No; the most skilful and experienced practitioner knows nothing of all this: there he stands, the ignorant and too often powerless spectator of such modifications as these of the primary disease. All he can do is to order certain remedies, which, if necessary, the nurse could prescribe equally well."

168. Magendie seems to be no friend to the technical language of the schools, and says, "it is an incoherent metaphor. Figures and tropes," he continues, "have their merit; but their fit place is in a poem, or a romance, and the science we cultivate will, I trust, cease to be ranked with such performances." He adds that "the language of the schools is loaded with false and grotesque comparisons, and calls aloud for reformation."

169. With regard to the practice of medicine, Magendie observes, "the physician mixes, combines, and jumbles together vegetable, mineral, and animal substances; administers them right or wrong, without considering for a moment the cause of the disease, and without a single clear idea as to his conduct. You may prove to him, as you will, that this or that substance is insignificant, useless, or even hurtful; little will he regard your expostulations. And why should he, when, by readiness in prescribing a monstrous farrago of drugs, he knows he shall acquire the reputation of being profoundly versed in the materia medica, of being a man of immense resources." Speaking of the prescriptions of medical men, he says—"I care little for the learned prescriptions in which the majority of practitioners delight; the mysterious dignity of their composition always seems to me calculated to throw chaff in the eyes of the vulgar, and rather to enhance the merit of the physician, than really to effect the recovery of the patient."

LOUIS AND HIS RESEARCHES.

170. Among the various system-makers of the present day, is the famous M. Louis of Paris. He published a work some years ago, entitled *Researches on the effects of Blood-letting in some Inflammatory Diseases*, &c. which was translated in this country by Dr. Putnam, and published with a preface and appendix by James Jackson, M. D., Physician to the Massachusetts General Hospital, and formerly Professor of Materia Medica in Harvard University.

171. Dr. Jackson, in his preface, speaking of the observations of M. Louis on blood-letting, says—"The result of them is, that the benefits derived from bleeding in the diseases which he has here examined, are not so great and striking as they have been represented by many teachers. If the same results should be obtained by others, after making observations as vigorous as those of M. Louis, *many of us will be compelled to modify our former opinion.*"

172. With regard to the new system of M. Louis, if system it may be called, we learn from Dr. Jackson that, after having gone through with his professional studies, he went abroad and returned to France at the age of thirty-two, intending to engage in private practice. "He was then led to examine anew the science of medicine, and was dissatisfied with it. He now decided to abandon the thought of practice, for a time, and to devote himself to observation, that is, to the study of disease as it actually presents itself." He passed nearly seven years in one of the Parisian hospitals, "and when he thought he had attained his art, he threw away the notes he had already collected, and began to accumulate new facts, and make new observations." When he had collected a great number of cases, he arranged them in a tabular form, and to accomplish this, he retired to a distance from Paris, and occupied ten months in making out his observations on acute diseases alone. This will give some idea of the immense labor he bestowed upon his undertaking.

173. By these tables, however, we only learn the derangement of various functions during life, and the changes of structure in different organs after death. If, for instance, the reader is desirous of knowing how many times difficulty of swallowing was experienced in typhus fever, or how often a pain occurred in the little finger or great toe, he has only to refer to these tables; but if he wishes to know how to *cure* typhus fever, he will refer to the tables in vain.

174. Dr. Jackson truly remarks, that "it is objected by some to the labors of M. Louis, and others of the French pathologists, that they labor with ardor on the subject of diagnosis, that they study with the zeal of entomologists, to discriminate minute changes of structure in the various textures of the human body, but that they do nothing to advance the proper business of the physician, the art of healing. Their therapeutics are decried as showing an ignorance of what has been thought certain in England and in this country; and they themselves are regarded as even indifferent to this branch of science."

175. The disciples of M. Louis are famed for making experiments in the treatment of disease. For example, they will give tartar emetic, to twenty patients with inflammation of the lungs, and bleed, or blister, twenty other patients with the same disorder; and by whichever plan of treatment the greatest number recover, that they adopt in all subsequent cases to which they may be called, till some new whim or caprice suggests itself to their fruitful imaginations. Unfortunately for the health and lives of the American people, the opinions of M. Louis are beginning to influence the practice of the old school physicians on this side of the Atlantic; and they seem to be quite as fond of making dangerous experiments as their great prototype himself.

OPINIONS OF DR. BROWN.

176. The celebrated Dr. Brown, in the preface to his work entitled *Elementa Medicinæ Brunonis*, observes that he spent more than twenty years in learning, and diligently scrutinizing every part of medicine. The first five years passed away in hearing others, studying what he had heard, implicitly believing it, and entering upon the profession as a rich and valuable inheritance. His mode of employment the next five years, was to explain more clearly the several particulars, to refine and give them a nicer polish. By the expiration of another five years, he became cold and indifferent to his studies; he began, with many other eminent men, to look upon the healing art as altogether *uncertain* and *incomprehensible*. "All this time passed away," says he, "without the acquisition of any thing valuable in the healing art, and especially without that, which, of all things, is the most agreeable to the mind, the light of truth." He confesses that it was not until between the *fifteenth* and *twentieth* year of his studies, that a slight gleam of light, which he compares to first dawn of day, broke in upon his benighted vision.

177. "He now began to see," says the author of the Philos-

ophy of Medicine, "that he must give up the logic, the philosophy, and the facts of physic as it then prevailed; that he must forget all his reading and all his knowledge; and, if he did not burn, as Paracelsus did, all the famous books that came in his way, he must shut them all, and seal each of them with seven seals, till he saw what he might make of his own thoughts."

178. Brown, it is known, was the rival of Cullen, whose system he endeavored to overturn, that he might establish his own upon its ruins; and speaking of Cullen's doctrine of "spasm," to which I shall allude in a subsequent part of this work, he says, "It was first suggested by Van Helmont, clumsily wrought into a system by Hoffman, and after being banished by Boerhaave, it found a protector and a friend in Cullen. This brat, this feeble, half-vital, semi-production of folly, the starveling of strained systematic dulness, the forlorn outcast of the fostering care to which it owed its insect-vitality, was now pampered by a crude and indigestible aliment, decorated with foreign plumage, and in this totally heterogeneous dress, was ostentatiously obtruded upon the world as a new and respectable doctrine."

REMARKS BY DR. CHAPMAN.

179. Dr. Chapman, Professor of the Theory and Practice of Medicine in the University of Pennsylvania, though one of the "*heroic physicians*," seems to be somewhat skeptical with regard to the use of drugs in certain diseases. The American Journal of the Medical Sciences, contains a very good article by him on dyspepsia or indigestion, in which we find the following judicious and highly sensible remarks.

180. "Tampering with medicines, (meaning of course *poisons*) is very detrimental. Every ache or discomfort, real or imaginary, must be relieved by a recurrence to some supposed remedy, till finally the powers of the stomach are worn out,—and derangements, either functional or structural, take place. It would be salutary were such people to bear in mind the epitaph of the Italian count, who fell a victim to this habit—

> 'I was well,
> Wished to be better,
> Took physic, and died.'

Nor can the profession escape the imputation of having contributed to this mischief. Called to a case of disease of such obscurity that no distinct notion can be formed of it, we go on groping in the dark, pouring down drugs empirically till the stomach gives

way, and its *derangements are added to the pre-existing affection*, by which a case is made of greater complexity, and of enhanced difficulty of cure. It is not easy, always, to avoid this course, from the ignorance or prejudice of mankind. The predominate estimate of the profession, even among the most enlightened people, leads to the delusive supposition that the materia medica has a remedy for every disease, and that the want of success, under any given circumstances, is owing to the poverty of resource of the practitioner in attendance. Confidence is soon withdrawn should he intermit his exertions, which perceiving, he too often multiplies his administrations, to avoid a dismissal, or to have imposed on him some one of the fraternity, who, it is expected, will bring forth fresh supplies. The consultation taking place, the new armory of weapons is opened and applied, with only an exasperation of the case. Not satisfied, however, further trials of others are made,—there is a repetition of a similar proceeding, and the catastrophe is complete.

181. "This, which might by some be suspected as a sketch of fancy, is a faithful and unexaggerated delineation of reality I have frequently seen and deplored. Convinced that he was falling a victim to this very practice, the Emperor Hadrian deliberately prepared as an inscription for his tomb—

"It was the multitude of physicians that killed the Emperor!"

182. In his Therapeutics, Dr. Chapman observes, "Certainly the annals of medicine, already sufficiently crowded and deformed with the abortions of theory, ought to moderate our ardor, and create in future, some degree of restraint and circumspection."

183. Alluding to the "spirit of speculation, or what is termed reasoning on medicine," he says, "nothing has been more prejudicial *than the abuse* of this noble prerogative. Consulting the records of our science, we cannot help *being disgusted* with the multitude of hypotheses which have been obtruded upon us at different times. Nowhere is the imagination displayed to greater extent; and perhaps, says an eloquent writer, so ample an exhibition of the resources of human invention might gratify our vanity, if it were not more than counterbalanced by the humiliating view of so much absurdity, contradiction and falsehood."

BROUSSAIS AND HIS DOCTRINES.

184. The doctrines of Broussais were at one time very popular in this country, but they do not now excite so much attention.

The two rival medical colleges in Philadelphia, were divided with regard to their merits some years ago, and were engaged in a warm and zealous controversy. Professor Revere of one of these institutions, made the following remarks on the subject in a lecture published in 1834 by the members of his class.

185. "At the present time, the Professor of Theoretical Medicine in the largest medical school in this country, is a professed admirer and disciple of M. Broussais; and some of the other learned professors in that most respectable institution, though more measured in acknowledging themselves his followers, are yet known to be the admirers, if not the open propagators of his opinions. That institution, too, having heretofore had, in a great degree, under its control, the medical press of the United States, has been, and is making every effort to disseminate these opinions and this practice. The practical maxims of the Broussaisan doctrines particularly extend to the diseases of this country, and are in *direct opposition* to those that have prevailed among the most eminent practitioners of medicine in the United States, especially since the time of Dr. Rush."

186. Dr. Revere gives an amusing picture from M. Barras, of the medical pupils of Broussais. "They are in constant dread," says he, "of inflammation of the stomach; if they feel the slightest uneasiness in the organ, they examine their tongues before a glass, or show them to one another; if they perceive, or fancy they perceive, any redness on the sides or tip, they are at once convinced, and fly immediately to leeches, gum water, and acid slops. After a time, this debilitating process engenders a morbid sensibility of the stomach, which renders them incapable of taking solid food without uneasiness, when they again have recourse to leeches and anti-phlogistics. By this plan the stomach is enfeebled, the nervous system deranged, and the individual often rendered miserable!"

187. As a specimen of the Broussaisan practice, the following is quoted from M. Barras by Dr. Revere.

188. "A man 29 years old had been for a long time troubled with indigestion. Having a recent attack of the complaint, but without fever or vomiting, and his appetite being still tolerably good, he applied to one of the disciples of Broussais for advice. *Ninety-six* leeches were applied at different times over the region of the stomach, and the patient was put on a course of gum water, lavements and starvation. After *fifty-five days* of this treatment, the attending practitioner was taken ill, and M. Barras was called to take his place. He describes the condition of the patient in the following language: 'He appeared like a person on the point of dying from hunger! Emaciation had arrived at the last degree

of marasmus, and the debility was so great that the patient could not raise himself from the bed; his tongue was moist throughout, white in the middle, red at the sides and extremity; face pale; disgust for drink; vomiting for some days past; had some desire for solid food; the pulse was weak; skin cold; urine watery and copious; stools scanty; nothing particular about the region of the stomach, except that the spine could be plainly felt through the walls of the abdomen.' "

189. If the doctrines of Broussais are what they are represented by Dr. Revere and M. Barras, it is a melancholy reflection that they should be taught with so much assiduity in the Pennsylvania University, in which there are five or six hundred students annually, and nearly half that number of graduates. If the young gentlemen who go from that institution with diplomas, are converts to the fanciful notions of Broussais, and take his rules of practice for their guide, it is easy to imagine how many lives they must sacrifice, in their vain endeavors to cure disease.

190. As a specimen of the opinions entertained by Broussais of his medical brethren, I select the following from one of his works: "All the inflammations," he remarks, "may produce cancer. This is a fact which it is important to place in the clearest light, because *physicians constantly reason in a circle, in the most incorrect manner*, in relation to these diseases. When an eroding ulcer occurs at the surface of the body, they endeavor to discover its cause. If they can suspect a scrofulous, herpetic, or other principle, for there are many other species of it, the ulcer is named and treated accordingly. If it be cured, it retains its epithet; if all attempts to arrest its progress are vain, it is declared to be cancerous. It even sometimes happens that it is necessary to recall this last epithet in consequence of its having been given too soon; and it is necessary to do that whenever the disease is cured, since it is agreed that cancer is incurable."*

REMARKS BY MISCELLANEOUS AUTHORS.

192. John Lizars, Fellow of the Royal College of Surgeons, and Lecturer on Anatomy and Physiology in Edinburgh, makes the following remarks on the present state of the old school practice of physic. "Let any one read the medical journals, or investigate the reports of the hospitals, and reconcile to his feelings

* Broussais's Pathology, p. 331.

the fatal blunders which are daily committed both by physicians and surgeons. How many are treated for colic, and die of inflammation of the bowels? How many are treated for low nervous fever or typhus, and die of acute inflammation? How many are tortured on the operating table, for stone in the bladder, or for aneurism, (enlargement of an artery,) and die on the same or following day, of hemorrhage, or inflammation produced by the unhallowed hands of the surgeon?

'Enter his chamber, view his breathless corpse,
And comment then upon his sudden death.'

192. "The next question," he says, "which may naturally be asked, is, does the same lamentable evil exist in private practice? and the answer is as naturally,—undoubtedly it does. This very day I have operated on a gentleman for fistula in perineo, whose urethra was destroyed by one of the medical practitioners of the county, attempting to introduce the catheter, about three years ago. I have been obliged to lay the urethra open from the bulb to the bladder, or rather I have been compelled to make a new urethra; for every vestige of the former one was obliterated by sinuses; and I here candidly confess that all the operations for puncturing the bladder which I have performed, and these have not been few, have been in consequence of practitioners injuring the urinary canal by the introduction of the catheter."

193. Dr. Good says, "The science of medicine is a barbarous jargon, and the effects of our medicine on the human system are in the highest degree uncertain, except, indeed, that they have already destroyed more lives than war, pestilence, and famine combined."

194. "Medical books," say the American editors of Marshall Hall's Practice of Medicine, "are so prompt to point out the cure of diseases, that the young student goes forth into the world, believing, if he does not cure diseases, that it is his own fault. Yet when a score or two of years have passed over his head, he will come at length to the conviction, that some diseases are controlled by nature alone. He will often pause at the end of a long and anxious attendance, and ask himself how far the result of the case is different from what it would have been under less officious treatment, than that which he has pursued; how many in the accumulated array of remedies, which have supplanted each other in the patient's chamber, have actually been instrumental in doing him any good. He will also ask himself whether, in the course of his life, he has not had occasion to change his opinion, perhaps

more than once, in regard to the management of the disease in question, and whether he does not, even now, feel the want of additional light ?"*

195. In the paragraph following the above, it is remarked, that "medicine has been rightly called a conjectural art."

196. Dr. Shattuck, in a Dissertation on the Uncertainty of the Healing Art, read before the Massachusetts Medical Society in 1828, observes, "The Nosologica Methodica of Sauvages comprises ten classes, twenty orders, three hundred and fifteen genera, and two thousand five hundred species of disease ; while Cullen has four classes, twenty orders, one hundred amd fifty-one genera, and upward of one thousand species. Good has cast his comprehensive mind on this difficult subject, and his nosology presents seven classes, twenty-one orders, one hundred and thirty genera, and four hundred and eighty species. Our distinguished countryman, Rush, has discovered disease to be a *unit*, and he proceeds fractionwise in his systematizing labors." Again, says Dr. Shattuck, "Physicians sometimes contradict themselves, and oftener one another in their nosologies." In another paragraph he remarks, "It is true that books on medicine are abundant ; but they oftener abound in theory founded on hypotheses, than in theory founded on fact ; they contain more arguments to demolish preceding or contemporary theories, than true history of human suffering."

197. Dr. Hall, in his work on *Loss of Blood*, page 76, says, "I may observe that of the whole number of fatal cases of disease in infancy, a great proportion occur from the inappropriate or undue application of exhausting remedies. This observation may have a salutary effect in checking the ardor of many young practitioners, who are apt to think that if they have only bled, and purged, and given calomel enough, they have done their duty ; when, in fact, in subduing a former, they have excited a new disease, which they have not understood, and which has led to the fatal result."

198. Dr. Abercrombie says, "We own our system defective, and the action of our remedies in the highest degree uncertain."

199. Dr. Alcott, in No. 1, of his Health Tracts, speaking of medical poisons, observes, "We do not deny—we cannot—that most of them are of great power and efficiency. The weakest of

* Hall's Practice of Medicine, by Drs. Bigelow and Holmes, p. 94.

them usually possesses power enough to redden and inflame the whole lining membrane of the stomach and intestinal canal ;—what then must be the result when the stronger ones are taken ? The truth is, as has been found from numerous dissections, this lining membrane may not only be in a state of sub-inflammation without our being sensible of it, but it may also be spread over with eruptions and small ulcers, without causing any perceptible difference in our feelings, except perhaps a little more thirst. The medical man may indeed detect other symptoms of trouble within, in a reddened tongue, hot breath, and more frequent pulse."

"LEARNED QUACKERY."

200. We are indebted for the above phrase to Dr. Benjamin Waterhouse, who, after lecturing for more than twenty years in the medical department of the Harvard University, retired, saying, "I AM SICK OF LEARNED QUACKERY !" As specimens of this *quackery*, I will make a few extracts from standard works, in relation to the treatment of particular forms of disease ; and medical men will have no reason to charge me with unfairness, if I seek to condemn them by their own testimony. I merely wish to satisfy the public that their works are full of speculations and discrepancies, and, of course, that their practice cannot be any other than visionary and uncertain.

201. YELLOW FEVER. This disease broke out for the second time in Philadelphia in 1793, and the various and entirely opposite modes of treatment which were resorted to by Dr Rush in its management, show how little he knew of the proper application of remedies in that dreadful scourge. The disease, says Dr. Thatcher, baffled the skill of the oldest and most judicious physicians ; and they *differed with regard to its nature and treatment.* It continued for *one hundred days*, and upwards of *four thousand* died, being about *thirty-eight* each day. Dr. Rush now came upon the stage of action, and tried, according to Dr. Thatcher, " the gentle purges used in the yellow fever of 1762 ; but finding them *unsuccessful*, and observing the disease to assume uncommon symptoms of great prostration of strength, he *laid them aside* about the twentieth of August, and had recourse to *ipecacuanha* in the first day of the fever, and to the usual remedies for exciting the action of the sanguiferous system, and gave *bark* in all its usual forms, and joined *wine*, *brandy*, and *aromatics* with it. He applied *blisters* to the *limbs*, *neck*, *and head.* Finding them all *ineffectual*, he attempted to rouse the system by wrapping the whole

body in blankets dipped in warm vinegar. He rubbed the right side with *mercurial ointment*, with a view of exciting the vessels in the whole system, through the medium of the liver. *None of these remedies appeared to be of any service.* Perplexed and distressed by his want of success, he waited upon Dr. Stevens, an eminent and worthy physician from St. Croix, who happened then to be in Philadelphia, and asked for such advice and information on the subject of the disease, as his extensive practice in the West Indies would naturally suggest. Dr. Stevens replied, that "he had long laid aside evacuations of all kinds in the yellow fever; that they had been found to be *hurtful*, and that the disease yielded more readily to *bark*, *wine*, and above all, to the use of the cold bath. He advised the bark to be given in large quantities and in every possible way, and pointed out the manner in which the cold bath should be used so as to derive the greatest benefit from it."

202. This plan of treatment was faithfully adopted by the speculative Dr. Rush. He prescribed bark in large quantities, and in various ways, and he frequently dashed cold water upon his patients by the bucket full. The bark, however, either proved offensive to the stomach, or was rejected by it in every instance. The cold bath, on the contrary, was grateful, and procured relief in several cases by *inducing a moist condition of the skin.*

203. Dr. Rush is represented by Dr. Thatcher as having "ransacked his library, and pored over every book that treated of the yellow fever. The result of his researches for a while was fruitless. The accounts of the symptoms and cure of the disease, by the authors he consulted, were *contradictory*, and none of them appeared applicable altogether to the prevailing epidemic." At length he resolved to give "*calomel* in doses of *ten grains*, quickened by *ten or fifteen grains of jalap.*" He also resorted to "*blood-letting*, *cool air*, *cold drinks*, *low diet*, *and the application of cold water to the body.*" These being regarded by Dr. Rush as the grand specifics in yellow fever, he employed *apothecaries*, *private citizens*, *women*, and even *colored people*, to go about and prescribe them, none of whom, it is presumed, had ever been favored with a *diploma.* Dr. Rush, however, did not seem to think that a diploma was of much consequence, for he asserts, in his Account of the Yellow Fever of 1793, that the success of his *two negroes* in curing the disease, was "*unparalleled* by what was called *regular practice*;" that a hundred things are taught in the common schools, less useful, "and many things more difficult than the knowledge that would be necessary to cure a yellow fever, or the plague;" and that "all the knowledge necessary to discern when blood-letting is proper, *might be taught to a boy or*

a girl of twelve years old in a few hours. "I taught it," he adds, "*in less time* to several persons during our late epidemic." "It is time," he exclaims in another place, "to take the cure of pestilential fevers *out of the hands of physicians*, and to place it *in the hands of the people.*"*

204. But did Dr. Rush cure the yellow fever with his calomel purges, blood-letting, cool air, and low diet? Mr. Cobbett states that instead of *saving* ninety-nine out of every hundred of his patients, as he asserted, he *lost* at least sixty-six out of every hundred; and this does not seem to be far from the truth. He also lost *four* out of *six* of his own family. Moreover, the leading members of the medical profession in Philadelphia, charged Dr. Rush with killing his patients, though it is probable their own practice was not a whit more successful. "These gentlemen," observes Mr. Cobbett, in the eleventh volume of his works, page 260, "insisted that Dr. Rush's *purges* were of too drastic a nature; they compared them to *arsenic*, and said they were a dose for a horse. They said that the mercury excited salivation, even to loosening the teeth. Rush replied to this objection by saying, that he met with but two cases, in which there was a *loss* of teeth from this medicine; but there is some difference between *loosening* and *losing* one's teeth. Dr. Rush probably thought it was nothing unless his patients' teeth dropped into their porridge."

205. The medical gentlemen above alluded to, said that mercury "inflamed the stomach and bowels; and, in proof, they cited a dissection made at Bush-hill, wherein were exhibited the horrid effects of the mercurial purges. Finally, when the calls of humanity compelled them, after long forbearance, publicly to protest against these dreadful doses, they reprobated the use of them in the strongest terms. Dr. Currie, who was one of the College of Physicians, earnestly besought the poor deluded Philadelphians to open their eyes, to beware of the new remedies; for, said he, '*the mode of treatment advised by Dr. Rush cannot, in the yellow fever, fail of being* CERTAIN DEATH.'"

206. So much for the "learned quackery" of Dr. Rush, who, nevertheless, was one of the most celebrated of American physicians, and who was aptly described by an eminent writer as an "intellectual giant groping in the dark in pursuit of medical truths."

207. CONSUMPTION. Magendie, speaking of this disease in his recent lectures on the blood, exclaimed, "Look at consumption! there is an affection which you see day after day cutting off

* Cobbett's Works, American edition, vol. xi. p. 275.

individuals of every age, sex, and rank, yet none has been more carefully studied on the old plan, none has proved a more fruitful source of dogma and disquisition. Eminent observers have described all its phenomena, even to the minutest details ; but what is all this description but so much natural history ? will it throw any light on the treatment of the affection ? Not a particle."

208. Dr. Good says, "Dr. Beddoes felt justified in declaring digitalis a cure for consumption as certain as bark for agues ; Dr. Barton of Philadelphia, has never known but one case cured by it, though others may have been palliated ; and Dr. Parr asserts roundly, that it is more *injurious* than *beneficial.*"*

209. Dr. Good recommends consumptive patients to use what is termed artificial ass's milk, which is made by boiling eighteen *contused snails* with an ounce of hartshorn shavings, of eryngo root, and pearl barley, in six pints of water, to half its quantity, and then adding an ounce and a half of sirup of Tolu. He also alludes to the practice of a celebrated Spanish physician, who buried consumptive patients up to the chin in fresh mould. He says "it would be most obvious to suppose that this was designed to act as a tonic, and check the undue tendency to perspiration by a protracted chill, but that Van Swieten tells us the smell of fresh earth is serviceable, and approves of it on this account."*

210. Dr. Wells of London was of the opinion that persons afflicted with consumption would be benefited by removing to districts where the fever and ague prevailed.*

211. Dr. C. Drake of New York proposed the breathing of *cold air* as a remedy in consumption,* and now physicians have changed their views, and recommend patients to wear what is termed a *respirator* over their mouths, that the air may be *warmed* before it enters the lungs.

212. Ague and Fever. Dr. Kellie suggests that if the circulation of the blood be arrested in an upper and a lower extremity, by means of a tourniquet, a check may be given to the cold stage of an intermittent fever. "I should apprehend," says Dr. Eberle, who quotes the above, "that in vigorous and plethoric subjects, considerable danger must attend this practice, from the tendency which it must have to favor vascular turgescence of the brain ; and thereby dangerous oppression or apoplexy."†

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* Study of Medicine, 6th American edition, vol. ii. pp. 56, 61, 66, 67.

† Eberle's Practice, 4th edition, vol. i. p. 113.

213. Dropsy of the Brain. "This disease, in children," observed Dr. Ware of Harvard University, to his class, "is so generally fatal, that medical treatment is not thought to be of any avail. We are justified in such cases in trying experiments, until time shall develope a mode of cure; but I know of no experiments yet, that have proved successful."

214. Dyspepsia. Dr. Mackintosh, in his remarks on dyspepsia, says, "Remedies have not the same effect in any two cases; and all plans of treatment will most generally fail, unless the patient himself can discover what articles of food agree with him better than others, and has resolution enough to adhere to a proper regimen."*

215. Again, he says, "Persons laboring under dyspeptic symptoms, will very generally be heard to attribute their complaints to a '*fit of the bile;*' and many medical men, I fear, confound stomach disorders with those of the liver, and too frequently exhibit powerful mercurial preparations, to the great injury of the patient."*

216. In another place he observes, "If the liver be not doing its duty properly, calomel, or the blue pill, may be occasionally exhibited at bed time, followed by a very small dose of salts in the morning; but it is a despicable practice to give blue pill in every disease connected with the digestive function. And it is much to be regretted, that the great name of Abernethy should ever have been associated with such insufferable quackery."*

217. "Common as dyspepsia is," says Dr. Eberle, "and serious as are its consequences upon the health and happiness of man, there is perhaps hardly any other malady which is so commonly misunderstood, and consequently mismanaged."†

218. Scarlet Fever. Dr. Francis of New York, says, "However various may be the methods of cure in scarlet fever adopted by different physicians, all admit the serious character of the disease, and its too often fatal termination. * * * Its fatality, as recorded in our annual bills of mortality, is truly alarming, and seems to reflect little credit on the skill of our most competent prescribers; in the city of New York alone, during the past six years, no less than fifteen hundred have perished by it."‡ The same writer, speaking of the use of mercurials in this disease, says—"The mortality of scarlet fever would be more within our

* Practice of Physic, 2nd American edition, vol. i. pp. 274, 275, 279.

† Practice of Medicine, 4th edition, vol. ii. p. 275.

‡ Good's Study of Medicine, 6th American edition, vol. i. p. 601.

control, and cease to be the topic of such consternation, were this heroic practice less popular."*

219. Dr. Fuller of Rhode Island, in a *prize* address on scarlet fever, which was published in the Boston Medical Journal about two years ago, makes the following quotation from Dr. Armstrong. "It ought to be noticed that most of the old authors are for, and most of the latter against, depletion, in the malignant forms of scarlet fever; so various are the records of human opinion, even on matters of vital importance. The theories of medical men are constantly changing, but diseases have always been under the same influences, as the planets revolve by the same laws, whatever conjectures were formed of them in the lapse of ages. The opinions of men may vary, but the operations of nature are unchangeable."

220. Dr. Fuller, in the course of his remarks, observes, that "early in his professional career, he followed the practice so constantly and so fatally recommended by almost all writers of the last half century, who considered scarlatina to be a putrid disease, requiring the employment of bark, wine and other cordials, for its cure." He adds, that "most writers of the last half of the eighteenth century recommended bark, combined with stimulants, as their sheet anchor in scarlatina;" but he says "the very idea is preposterous, and he knows of no circumstances which should induce him to employ bark, or any of its preparations, during the two first stages of this highly inflammatory disease."

221. Somebody must be in error here, but who, we will leave for others to decide. The inference is plain, however, as we once remarked in another publication, that thousands and tens of thousands have been sacrificed by this "fatal" practice within the last fifty years; and yet the world seems to be either ignorant or regardless of these fearful enormities, which have been perpetrated in the name of *science*, and under the protection of the law.

222. Delirium Tremens. Speaking of the use of emetics in this disease, Dr. Eberle remarks, "In several instances they failed, in my hands, of doing any good; and in two cases, within the last six years, they were unequivocally injurious. To one patient who had been long a confirmed drunkard, I administered, in divided doses, fifteen grains of tartar emetic. It produced neither purging nor vomiting; but its sedative operation was immediate and powerful. In about an hour after taking the medicine, the pulse became small and extremely feeble—the extremities ice-cold, and a profuse, cold, clammy sweat broke out over the whole body. The patient sunk rapidly, and expired about

* Good's Study of Medicine, 6th American edition, vol. i. p. 603.

four hours after the antimony was taken. In the other instance, the emetic brought on the most profuse and exhausting diarrhœa, and soon prostrated the patient below the point of reaction."*

223. Such is often the effect of antimony, administered as an emetic, for it is a powerful and destructive poison; but no such effects have ever been known to accrue from lobelia inflata. I have given it in several cases of delirium tremens as an emetic, and always with the most favorable results.

224. With regard to the use of opium in this disease, which is employed by some of the medical faculty, Dr. Coates says, "I have never seen, read of, or heard of an instance in which opium was productive of harm." Dr. Eberle however, disagrees with his medical brother, and quoting his paragraph, remarks, "I must, indeed, be greatly mistaken in the diagnosis, if I have not seen one unequivocal instance of this kind. In a case which I regarded as pure and uncomplicated delirium tremens, four grains of opium were given every two hours. In twelve hours the patient was comatose, became convulsed, and soon expired."*

225. During my visits to the Massachusetts General Hospital, Dr. Hayward, remarking on the use of opium in delirium tremens, said that it had been employed to an unwarrantable extent. He thought that it sometimes gave rise to apoplexy, and thereby caused the death of the patient. He had discarded the drug at the hospital, and either the cases were milder, or he had been far more successful than those who resort to the opium practice.

226. Scrofula. Dr. Mackintosh, in his remarks on scrofula, observes, "I was once very much amazed on hearing the answer given by a physician, in my presence, to a lady who was desirous of knowing how long her little girl, afflicted with this disease, was to be compelled to take the solution of muriate of lime. She stated that it was very nauseous, and that it had done the child no good, although she had taken it regularly for *six months*. The physician replied, that it would probably require *three or four years* before it would produce any beneficial effects, and that it must be regularly taken. Whether the physician spoke, believing what he said to be true, I cannot pretend to say, but he looked *grave enough*."†

227. Small Pox and Chicken Pox. "With respect to the small pox and chicken pox," says Dr. Good, "a contest of no ordinary magnitude arose in early times upon the subject, in

* Eberle's Practice, 4th edition, vol. ii. pp. 178–9, 177.
† Practice of Physic, 2d American edition, vol. ii. p. 474.

support of which, every nation in Christendom, as in the Holy Wars, for many ages sent forth its champions, and the conflict has been of still longer duration than the Holy Wars themselves."*

228. Dr. Bigelow, in a lecture before his class in Harvard University, remarked, that in "measles, small pox, scarlet and typhus fevers, medical men could not arrest their progress; they must have their course; or if there were remedies by which they could be broken up, medical science had not yet arrived at a knowledge of them."

229. Gout. "The following means," remarks Dr. Eberle, "have been advised in the forming stage of gout, in order to moderate or prevent a paroxysm. Emetics by Chalmers, active cathartics by Musgrave, vegetable bitters, iron, and high seasoned food by Grant, Dover's powder, or antimonial wine with opium by Fothergill, large doses of musk or castor by Williams, bleeding from the foot by Gilbert, the application of very cold water to the feet by Giannini, and the internal use of iced water by Barthez.†

230. Here is certainly an ample variety of "means" for the cure of gout, and the physician who happens to be in the possession of Dr. Eberle's work, will not be at a loss how to proceed!

231. Hooping Cough. "When blisters were formerly employed with great freedom in this disease," observes Dr. Good, "it was thought to be ascertained that they always answered best when they *irritated the bladder and occasioned strangury*."‡

232. Inflammation of the Liver. Dr. Mackintosh says inflammation of the liver is often confounded with functional and structural derangement of neighboring organs. He has seen some remarkable cases of this. One dissection revealed inflammation of the inferior lobe of the right lung, and another a collection of matter within the chest; both of which had been mistaken during life, and treated as an affection of the liver with sundry courses of mercury."‖

233. Dr. Eberle recommends equal parts of nitric acid (*aqua fortis*) and muriatic acid, as a remedy in acute inflammation of the liver. "From a half to a whole drachm of this mixture," says he, "diluted in a sufficient quantity of water, may be taken daily;

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* Study of Medicine, 6th American edition, vol. i. p. 626.
† Eberle's Practice, 4th edition, vol. i. 415.
‡ Study of Medicine, 6th American edition, vol. i. p. 272.
‖ Practice of Physic, 2d American edition, vol. i. p. 422.

and in order to prevent the acid from coming in contact with and injuring the teeth, *it should be sucked through a small glass tube, or quill.*"*

234. If the teeth are in so much danger of being injured by the corrosive effect of these powerful acids, what are we to expect from them when they arrive in the stomach? Physicians of the old school frequently assert that cayenne "will burn a hole in the stomach," notwithstanding it is perfectly harmless, and yet they have no objection to prescribing *aqua fortis*, provided they can introduce it into the stomach so as not to *burn* or *corrode* the patient's teeth.

235. Spinal Irritation. The following case of spinal irritation, which was mistaken by various physicians for other diseases, was related by J. H. Griscom, M. D. in an Essay read before the New York Medical and Surgical Society, in November, 1839. It is a forcible comment on what is termed the *scientific practice of medicine.*

236. "Mrs. Terry, of No. — Stanton street, was first seen February 23d, 1836. She is of spare form, delicate looking, and of slender constitution. Has had poor health for four years back, not having passed a fortnight at a time in the enjoyment of robust health, and freedom from pain during that period. She is 26 years old, and has had four children. Almost the first symptom of disordered health which she recollects to have felt, was a heavy dull pain through the hips, which she said felt very much like early labor-pains. Commencing with this, a variety of symptoms followed, of the most strange and unaccountable kind, gradually increasing in number and severity, the patient being overcome, at times, with a feeling of great oppression, and, at others, suffering torturing pains. She had tried various modes of treatment, and pursued them all to the fullest extent, with the vain hope of finding relief. One respectable physician informed her that her lungs were seriously affected; that she had only a portion about the size of a dollar left that was sound, and put her upon a course of medicine, what, she does not know. Another told her she must *ride*, and she spent several dollars in patronising the Dry Dock stages, and many more in country jaunts. Another bled her five times in as many days, 'almost to death,' as she expressed it. Another salivated her, presuming on the '*liver complaint*,' but all to no purpose, as each method left her worse and more debilitated than it found her."

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* Eberle's Practice, 4th edition, vol. i. p. 274.

MEDICAL SKEPTICISM.

237. We do not often find medical men taking their own drugs when they are indisposed; and in many instances they manifest a reluctance in giving them to their patients. This is what I mean by *medical skepticism;* and it prevails to a much greater extent than is generally imagined.

238. Dr. Pierson of Salem, Massachusetts, in a memoir of his fellow townsman, Dr. Nehemiah Cleaveland, who died about two years ago, at the advanced age of eighty years, says that the deceased "to the end of his life—in opposition to the opinions and wishes of friends and of physicians—declined almost entirely the use of those *narcotics* which would have relieved his pain, lest they should *deaden his moral and intellectual sensibilities.*"*

239. The above is some proof of our assertion that physicians are afraid of their own drugs. With regard to Dr. Cleaveland, however, there is no doubt that he often gave *narcotics* to his patients, little caring, perhaps, how much he "deadened *their* moral and intellectual sensibilities;" and the question arises, whether, by the use of these stupifying agents, individuals are not frequently sent from time to eternity with their sins unforgiven, who might, under other circumstances, have obtained the pardon of a just and merciful God. When our Saviour was on the cross, expiring in the agonies of death, he told the bystanders that he was thirsty, and they offered him a drink which was intended to produce intoxication and render the pains of his crucifixion less acute, but he refused "for the obvious reason that he chose to die with the faculties of his mind undisturbed and unclouded."† How worthy of imitation is the example of our Saviour; and I do not hesitate to say that every Christian, who has any regard for his spiritual welfare, will abstain from poisonous or deleterious substances in the hour of sickness or approaching death.

240. Dr. Warren, professor of Anatomy and Surgery in Harvard University, made the following remarks last winter in one of his lectures. "As I was walking in the street about a year ago, I felt a sudden pain in the back part of my leg, which prevented me in some measure from walking. The pain was seated in one of the nerves, and was rather obstinate. There were two reme-

* Boston Medical and Surgical Journal.

† See Jahn's Biblical Archæology.

dies which I could employ, either a dose of laudanum, or a long walk. I preferred the latter, and it afforded me the desired relief."

241. Whether Dr. Warren, if he were called to a patient similarly afflicted, would recommend the poison of opium, or a little wholesome exercise, I am unable to determine.

242. Professor Bigelow of Boston, is said to have but little confidence in what is termed the "fashionable practice of medicine," and this is apparent from the general tenor of his lectures. Speaking before his class on the subject of typhus fever, he said, "No question has been more agitated than whether this disease can be cut short by active treatment. Six or seven years ago this opinion was prevalent among us, but it is now entirely abandoned; for it has been found that although a patient were bled, blistered, purged, and salivated, the fever still continued on in its course.

243. "There is scarcely any treatment," continued the professor, "which has not been in vogue in typhus fever; at one time patients were bled and purged; at another, salivated; at a third, treated with antimony and similar remedies; but all of these modes of practice have fallen into disrepute. Nevertheless, when we are called to a case, we must order a prescription, for we cannot stand by as idle spectators; and if the patient should fortunately recover, let the physician look at the scores of bottles, and quantity of medicine, which have accumulated in the sick chamber—this being the natural consequence of an almost daily change of remedies—and if he be a candid man, he will confess that there is a doubt, whether the remedies employed have been of any service whatever. In the exact sciences we admit nothing to be true until its opposite is proved to be untrue, but in medicine we are obliged to admit the treatment of cases in evidence, when it is not known whether the patients would not have recovered without any treatment at all."

244. Mrs. G—— of Boston, a highly intellectual lady, was attacked with hemorrhage from the lungs, which ceased without the interposition of medical aid. Fearing she was threatened with pulmonary consumption, she consulted Dr. W—— L——, an eminent old school physician, and he advised her, very much to her astonishment, not to take any medicine, for, said he, any thing that we physicians could prescribe, would cause derangement of your stomach, and thereby sympathetically affect your lungs.

245. Here was a species of skepticism not uncommon among

physicians; and if their drugs affect the stomach injuriously in consumption, and give rise to a new train of morbid symptoms, I ask whether they have not a similar tendency in every other form of disease?

246. Mrs. G——, as a further history of her case, laughingly remarked to me, that although Dr. L. had advised her not to employ *medicine*, as he used the term, another physician almost equally distinguished, told her that it was indispensable, and would be the only means of saving her life.

247. Mr. John C. Mason of Philadelphia, aged about 30, related to me the following particulars a year ago. In July, 1839, he lived in Tioga county, Pennsylvania, where he was attacked with inflammation of the lungs. Dr. F. H. White was his physician. He gave him *ten doses* of calomel within three days, which caused salivation, and the patient remained in this condition for *fourteen days*. Meanwhile, he was bled *seven* different times. After the fourteenth day he was given up as hopeless. At length, however, he rallied somewhat, and gained sufficient strength to enable him to return to his friends in Philadelphia, where he called in Dr. Mc Clellen of the Jefferson Medical College. At that time he could not speak, having lost his voice soon after the salivation commenced, and he was annoyed by a constant hacking cough. Dr. Mc Clellen gave him a mixture which did not afford him any relief, and at his second visit, advised him to go to an infirmary, and take courses of medicine. He thought the cayenne and lobelia would be useful to him. The patient's friends did not expect him to survive, and so wretched was his situation, that he had no desire to live. He took nine courses of medicine, however, and to the astonishment of all, was restored to better health than he had enjoyed for years. During the first two or three courses, his apartment became so offensive, as soon as he began to perspire, that it was almost impossible for the nurse to remain in his presence. He had continued well up to the period that I saw him, and worked daily at his trade, which was that of a carpenter.

248. The above case is interesting, because it shows how little confidence Professor Mc Clellen had in his own mode of treatment; and he is reported to have said in one of his lectures, that medical men must either adopt "the botanic remedies, or lose their practice."

249. There is something in the operation of a poison on the human system, though it may be given in small doses, which suggests to the intelligent physician the danger, or at least the

impropriety, of employing such an agent; but as he has been educated to believe that nothing excepting a poison can exercise any medicinal influence, he finds it almost impossible to relinquish his preconceived notions. Thus it is that reform in medicine is so tardy in its progress.

250. I have observed that medical students are generally skeptics during the first course of lectures they attend, but in proportion as they become familiarized with their dreadful trade, their skepticism dies away, and they fancy that they can cure any disease with the lancet, opium, calomel, and a few other drugs.

251. The following instance of medical skepticism is not, perhaps, altogether unworthy of notice.

252. About ten years ago, a physician of considerable distinction, whose name I am not at liberty to repeat, though it is well known to a number of our mutual friends, solicited me to prescribe for him in a severe attack of disease under which he was suffering, saying that he could not long survive unless he was relieved, and that he was afraid to call in his medical brethren, lest they should hasten his death. Medicines were immediately given to him, followed by a course of medicine, which occupied, altogether, about twenty-four hours, and at the end of that time, he declared that his health was better than it had been for several years.

FRUITS OF THE OLD PRACTICE.

253. Pliny informs us that Rome was five hundred years without physicians. Her rulers forbade the practice of medicine, and banished its professors. Would they have done this, but that they saw the ill effects of medical treatment? Would they have banished those who were really skilled in the healing art, and were capable of alleviating or curing disease? On the contrary, when Archagathus, a Peloponnesian, first established himself in Rome as a medical practitioner, he was treated with great respect by the citizens, and was even maintained at the public expense; but his practice proved to be so severe and unsuccessful, that he soon excited the dislike of the people, and produced a complete disgust to the medical profession, which led to the banishment of himself and brethren.*

254. Without wishing to be unjust to the physicians of our our own times, it appears to me that they are quite as worthy of

* Bostock's History of Medicine, chap. iv.

banishment as those who were driven from Rome *twenty centuries* ago, for that was the period at which the event took place. To be satisfied of the horrible effects of their practice, we have only to glance over the page of history, and observe how many distinguished individuals have been its unsuspecting victims. Washington, for instance, after having fought the battles of his country unharmed, was killed, according to the best authority, by his physicians. Byron, also, England's noblest poet, met with a similar fate; and I might mention Spurzheim, Wirt, Miss Landon, and a host of others, equally distinguished for their genius and virtues, who paid the forfeit of their lives by obeying the injunctions of their medical attendants. With regard to the decease of Washington, I will quote the observations of John Reid, M. D., Physician to the Finsbury Hospital, England, and Professor of the Theory and Practice of Physic.

255. "In reading the official report of the death of General Washington," says Dr. Reid, "I should imagine there were few medical persons who did not feel astonishment at the extraordinary manner in which that great man was treated by his physicians, during his last and fatal indisposition.

256. "Some time in the night of the 13th of December, it is said, the General was seized by a disease called the cynanche trachealis or croup.

257. "During the same night he sent for a bleeder, who took from him 12 or 14 ounces of blood.

258. "Next morning a physician was sent for, who arrived at Mount Vernon at 11 o'clock; when, imagining danger in the case, he advised the calling of two consulting physicians.

259. "In the interval, however, he thought proper to employ, in spite of the 12 ounces that had already been expended, two copious bleedings. Now, when we consider that these are called *copious*, and the other is not noticed as such, and all the indifference with which a future *most copious* bleeding, is afterwards mentioned, we may presume that each of these was at least 20 or 25 ounces.

260. "After this, 'two moderate doses of calomel were administered.' I know not exactly, what an American moderate dose of calomel may be; but if it is fair to presume it be in proportion to the bleedings, we may conclude that it was at least very considerable.

261. "Upon the arrival of the first consulting physician, it was agreed, that, as there were no signs of accumulation in the bronchial vessels of the lungs, they should try another bleeding.

262. "Now this appears to be perfectly inexplicable. As there were, at present, no signs of accumulation in the bronchial

vessels of the lungs, they were driven to another bleeding. Hence it will be seen, that this last bleeding was to produce an accumulation in the bronchial vessels of the lungs! There was great difficulty of breathing, great inflammation; but as there was as yet no accumulation in the lungs, they were determined to induce that also, and as a likely means of inducing it, had recourse to the most extravagant effusion of blood. This is not an unfair interpretation of their words; but it could not have been their real meaning; their real meaning it is impossible to discover. In addition to all their previous venesections, *thirty-two* ounces are now drawn! The medical reader will not be surprised to find that this was unattended by any apparent alleviation of the disease.

263. "In the next place, vapors of vinegar and water are frequently inhaled. Two doses of calomel were already given, but this is not deemed sufficient; ten grains of calomel are added; nor is even this sufficient. Repeated doses of emetic tartar, amounting in all to five or six grains, are now administered. It is said, the powers of life now seemed to yield to the force of the disorder. To many, it may appear that the yielding of the vital principle, in these circumstances, was not altogether owing to the force of the disorder.

264. "The patient, lying in this feeble, nearly exhausted state, is to be still further tormented. Blisters were next applied to his extremities, together with a cataplasm of bran and vinegar to his throat.

265. "It is observed that speaking, which was painful from the beginning, now became scarcely practicable. When we reflect upon the extreme weakness to which the patient must, by this time, have been reduced, and that he had both a blister and a cataplasm of bran and vinegar to his throat, can we wonder that speaking would be scarcely practicable! respiration grew more and more contracted and imperfect, until after 11 o'clock on Saturday night, when he expired without a struggle.

266. "Think of a man being within the brief space of a little more than twelve hours, deprived of 80 or 90 ounces of blood; afterward swallowing two *moderate* American doses of calomel, which were accompanied by an injection; then ten grains of calomel and five or six grains of emetic tartar; vapors of vinegar and water frequently inhaled; blisters applied to his extremities; a cataplasm of bran and vinegar applied to his throat, upon which a blister had already been fixed; is it surprising that when thus treated, the afflicted General, after various ineffectual struggles for utterance, at length articulated a desire that he might be allowed to die without interruption!

267. "To have resisted the fatal operation of such herculean

remedies, one should imagine that this venerable man ought, at least, to have retained the vigor of his earliest youth."

268. Thus speaks a member of the medical profession, and it will not be denied, perhaps, that he is competent authority. As a professor in a medical college, his opinion is certainly entitled to respect and consideration. The official report to which he alludes, was furnished by Dr. Craik, attending physician of General Washington, and Dr. Dick, consulting physician. Of its accuracy, there is not a doubt; and Dr. Reid has not misrepresented it in the slightest particular. Independent of this high authority, however, it is generally admitted by medical men, that Washington fell a victim to the lancet. Dr. Joseph Comstock, speaking of the effects of blood-letting in diseases of the throat, says, "I have long viewed Gen. Washington as having fallen a martyr to this practice." (Boston Medical and Surgical Journal, vol. xx. No. 13.) William Cobbett, in the eleventh volume of his works, page 20, says, "That the *lancet*, which has destroyed, in America, many more than have been destroyed by the *yellow fever*, put a period to the existence of Gen. Washington, NO ONE CAN DOUBT."

269. The death-bed scene of Lord Byron was equally appalling with that of our beloved Washington. Moore, in his life of the noble poet, has given us all the leading particulars. It appears that Byron, while in Greece, was making an excursion in the neighborhood of Missolonghi, together with his companion, Count Gamba, for the sake of exercise, and was overtaken by a heavy shower of rain, by which he was drenched to the skin. About two hours after his return home he was seized with a shuddering, and complained of fever and rheumatic pains. "At eight that evening," says Count Gamba, "I entered his room. He was laying on a sofa, restless and melancholy. He said to me 'I suffer a great deal of pain. I do not care for death, but these agonies I cannot bear.'"

270. "The following day he rose at his accustomed hour,—transacted business, and was even able to take a ride. He complained, however, of perpetual shudderings, and had no appetite. On his return home, he remarked to Fletcher, that his saddle, he thought, had not been perfectly dried since yesterday's wetting, and he felt himself the worse for it.

271. "On the evening of the 11th, his fever, which was pronounced to be rheumatic, increased; and on the 12th he kept his bed all day, complaining that he could not sleep, and taking no nourishment whatever. The two following days, though the fever

had apparently diminished, he became still more weak, and suffered much from pains in the head.

272. "It was not till the 14th that his physician, Dr. Bruno, finding the sudorifics which he had hitherto employed to be unavailing, began to urge upon his patient, the necessity of being bled. Of this, however, Lord Byron would not hear. He had evidently *but little reliance on his medical attendant*, and from the specimens this young man has since given of his intellect to the world, it is, indeed, lamentable,—supposing skill to have been, at this moment, of any avail,—that a life so precious should have been entrusted to such ordinary hands.

273. "It was at this juncture that Mr. Millingen was, for the first time, according to his own account, invited to attend Lord Byron in his medical capacity,—his visit on the 10th being so little, as he states, professional, that he did not even, on that occasion, feel his lordship's pulse. The great object for which he was now called in, and rather, it would seem, by Fletcher than Dr. Bruno, was for the purpose of joining his representations and remonstrances to theirs, and prevailing upon the patient to suffer himself to be bled,—an operation now become absolutely necessary from the increase of the fever, and which Dr. Bruno had, for the last two days, urged in vain.

274. "Holding gentleness to be, with a disposition like that of Byron, the most effectual means of success, Mr. Millingen tried, as he himself tells us, all that reasoning and persuasion could suggest, towards attaining his object. But his efforts were fruitless;—Lord Byron, who had now become morbidly irritable, replied angrily, but still with all his accustomed acuteness and spirit, to the physicians' observations. Of all his prejudices, he declared, the strongest was that against bleeding. His mother had on her death-bed obtained from him a promise never to consent to being bled; and whatever argument might be produced, his aversion, he said, was stronger than reason. 'Besides, is it not,' he asked, '*asserted by Dr. Reid, in his Essays, that less slaughter is effected by the lance than the lancet—that minute instrument of mighty mischief!*' On Mr. Millingen observing that this remark related to the treatment of nervous, but not of inflammatory complaints, he rejoined, in an angry tone, 'Who is nervous, if I am not? And do not those other words of his, too, apply to my case, where he says that *drawing blood from a nervous patient is like loosening the chords of a musical instrument, whose tones already fail for want of sufficient tension?* Even before this illness, you yourself know how *weak* and *irritable* I had become;—and *bleeding*, by *increasing this state*, will *inevitably kill me*. Do with me whatever else you like, but bleed me you shall not. I have had

several inflammatory fevers in my life, and at an age when more robust and plethoric; yet I got through them without bleeding. This time, also, will I take my chance.'

275. "After much reasoning, and repeated entreaties, Mr. Millingen at length succeeded in obtaining from him a promise, that should he feel his fever increase at night, he would allow Dr. Bruno to bleed him.

276. "During this day he had transacted business, and received several letters, particularly one that much pleased him from the Turkish Governor, to whom he had sent the rescued prisoners, and who, in this communication, thanked him for his humane interference, and requested a repetition of it.

277. "In the evening he conversed a good deal with Parry, who remained some hours by his bed-side. 'He sat up in his bed,' says this officer, 'and was then calm and collected. He talked with me on a variety of subjects connected with himself and his family; spoke of his intentions as to Greece, his plans for the campaign, and what he should ultimately do for that country. He spoke to me about my own adventures. He spoke of death also with great composure, and though he did not believe his end was so very near, there was something about him so serious and so firm, so resigned and composed, so different from any thing I had ever before seen in him, that my mind misgave me, and at times foreboded his speedy dissolution.'

278. "On revisiting his patient early next morning, Mr. Millingen learned from him, that having passed, as he thought, on the whole, a better night, he had not considered it necessary to ask Dr. Bruno to bleed him. What followed, I shall, in justice to Mr. Millingen, give in his own words. 'I thought it my duty now to put aside all consideration of his feelings, and to declare solemnly to him, how deeply I lamented to see him trifle thus with his life, and show so little resolution. His pertinacious refusal had already, I said, caused most precious time to be lost;—but few hours of hope now remained, and, unless he submitted immediately to be bled, we could not answer for the consequences. It was true, he cared not for life; but who could assure him that, unless he changed his resolution, the uncontrolled disease might not produce such disorganization in his system as utterly and forever to deprive him of reason?—I had now hit at last on the sensitive chord; and, partly annoyed by our importunities, partly persuaded, he cast at us both the fiercest glance of vexation, and throwing out his arm, said, in the angriest tone, 'There—you are, I see, a d—d set of butchers—take away as much blood as you like, but have done with it.'

279. "'We seized the moment,' adds Mr. Millingen, 'and

drew about *twenty ounces*. On coagulating, the blood presented a strong buffy coat; yet *the relief did not correspond to the hopes we had formed, and during the night the fever became stronger than it had been hitherto*. The restlessness and agitation increased, and the patient spoke several times in an incoherent manner.'

280. "On the following morning, the 17th, the bleeding was repeated; for, although the rheumatic symptoms had been completely removed, *the appearances of inflammation on the brain were now hourly increasing*.

281. "In addition to the bleeding, which was repeated twice on the 17th, it was thought right also to apply blisters to the soles of his feet.

282. "It was about six o'clock on the evening of this day when he said, 'Now I shall go to sleep;' and then turning round fell into that slumber from which he never awoke. For the next twenty-four hours he lay incapable of either sense or motion,—with the exception of, now and then, slight symptoms of suffocation, during which his servant raised his head,—and at a quarter past six o'clock on the following day, the 19th, he was seen to open his eyes and immediately shut them again. The physicians felt his pulse—he was no more."

283. I have italicised passages which I thought were particularly deserving of the reader's notice. The "twenty ounces of blood" which were taken in the first instance, did not afford the desired relief, but on the contrary, "the fever became stronger during the night than it had been hitherto." On the following morning the bleeding was repeated, because the "appearances of *inflammation on the brain were increasing hourly*." Do not these facts go to confirm the belief that blood-letting cannot be relied on as a means of subduing fever and inflammation, even though it should be pushed to an alarming extent? Nay, we are told by Magendie, and others, that the loss of blood has a tendency to *produce* inflammation, and it is confidently asserted that if a healthy animal be killed by repeated small bleedings, its brain will be found, on dissection, to be in a high state of inflammation. But to return to poor Byron! He was not only bled three times on the 17th, but had blisters applied to the soles of his feet; and it is no wonder that he soon began to sink into a state of insensibility, for the same treatment was sufficient to have destroyed an individual in health. In a little more than a week from the commencement of his attack, he closed his eyes in death—a martyr to the most dangerous of all quackery, that of the "*learned*" *and diplomatised medical faculty*.

284. People generally have no idea of the number of people who are destroyed by the old school practitioners. Dr. Alcott, in the first number of his Health Tracts, observes, "An intelligent professor in one of our western colleges, thinks that each young physician kills, upon the average, about twenty persons, before he is fairly initiated into his profession." Now, according to the Christian Review, there are twenty-seven medical schools in the United States, with about two thousand seven hundred and fifty students; and at the lowest calculation, it is probable that *one thousand* of these graduate annually, and receive diplomas. At the same rate, we should have in the space of five years, no less than *five thousand* young physicians, fresh from the colleges, who are ready to engage as practitioners; and if each one should kill twenty persons, as is suggested by the western professor, the whole number killed would be ONE HUNDRED THOUSAND. These, however, are only the *acknowledged* murders; and if we were to add those to the list which are not supposed to be the result of medical treatment, the number would be incalculable. Well may Thomas Jefferson have exclaimed, "I believe I may safely affirm that the inexperienced and presumptuous band of medical tyros let loose upon the world, destroys more human life in one year than all the Robin Hoods, Cartouches, and Macbeths do in a century."*

285. Do physicians who resort to blood-letting and the use of poisons, ever cure their patients? This is a point on which I am entirely skeptical. For example, suppose an individual is attacked with a violent fever, for which he is bled copiously, blistered on various parts of the body, leeched, or cupped, as the case may be, dosed with calomel, nitre, digitalis, and sundry other poisons, and withal forbidden to take the slightest degree of nourishment. Need we be told that in a short time he will be reduced very low, and his life in all probability despaired of? Nevertheless, he may ultimately recover, and in that event, the physician claims the credit of having effected the *cure*, and is lauded to the skies, perhaps, for his extraordinary skill. We have no evidence, however, that there was any cure in the case, except that nature, in her sanative operations, triumphed equally over the *disease* and the *treatment*. This will appear obvious by supposing another case. Take, for example, an individual in perfect health, and put him through the above routine of treatment—that is, let him be bled, blistered, leeched, cupped, starved, and dosed with calomel, nitre, and other pernicious drugs, and he will soon be as danger-

* See a letter from Thomas Jefferson to Dr. Wistar.

ously ill as the patient with the fever, and his chances of recovery quite as uncertain. Notwithstanding all this, however, if too great a shock has not been given to his constitutional powers, he may finally recover, as in the case already cited; but there is no physician, in this instance, to claim the merit of having performed the cure; and all that can be said, is, that the treatment which was supposed to have *cured* the patient with fever, has given rise to dangerous and obstinate disease in a healthy individual.

286. There is more philosophy than poetry in the assertion of Dr. Thomson, that we cannot *cure* a *sick man* by the same means we would employ to *kill* a *well beast*.

HOSPITAL CASES.

287. During the winter of 1838–9, I visited the Massachusetts General Hospital three times a week, in company with the physicians and surgeons, and took notes of a majority of the cases which were under treatment at the time. Some of these cases I shall now present to the public in a condensed form, but with a strict regard to accuracy, that it may be known how diseases are treated in an institution which is under the control of some of the most distinguished physicians and medical professors in the United States.

288. Mary E. Blatchford. This was a young woman with an eruption of the skin. The backs of her hands, and the whole of her left arm, were covered with dry looking scales or scabs. When I first saw her, which was on the 22d of November, 1838, Dr. Bigelow, the visiting physician to the hospital, said he did not know what precise name to give the disease.

289. Nov. 26th. To-day a second visit was made; Dr. Bigelow observed to the class, that the patient was taking *Fowler's solution* (a preparation of *arsenic*)—five drops at a time. He then turned to the patient and said, "If the *medicine* causes sickness, or if your eyelids become *swelled* or *puffy*, you must make it known to the house physician, and he will regulate your doses accordingly."

290. Nov. 29th. *Bigelow to the class.* "Miss Blatchford has been taking Fowler's solution for a week, but was obliged to leave it off because it *irritated* her stomach and eyelids, as it is very apt to do. She is now taking the tincture of *cantharides*," (Spanish or blistering flies.)

291. Dec. 3d. No remarks to-day from Dr. Bigelow. The

patient told me she was much worse, and that she still continued to take the tincture of cantharides.

292. Dec. 6th. *Bigelow.* "Patient has been taking Fowler's solution and tincture of cantharides, but without benefit, and she has been bled about *twelve ounces.* She may take sulphur and supertartrate of potassa, (cream of tartar) one scruple each, night and morning.

293. Dec. 10th. *Bigelow.* "You see the back of the hand is considerably inflamed with cantharides, the application of which may now be discontinued. I thought I would try the *experiment* of blistering one hand, as both of them are covered with the eruption; by establishing a *new* disease in this way, both the *old* and *new* diseases may disappear together."

294. Dr. Bigelow advised no new prescription to-day; the patient informed me that she was growing worse.

295. Dec. 13th. *Bigelow.* "I blistered one hand to see what would be the effect; it is now, you see, pretty well inflamed; it gives more trouble than the other hand, and it remains to be seen what will be the final result. Patient is pretty much *in statu quo.*"

296. Dec. 17th. *Bigelow.* "The warm bath has been administered five times, but it has done no good, though it generally succeeds in cases of this kind." Turning to Miss B. he said, "We will put you on a *new* medicine to-day. You may take half an ounce of *dulcamara** three times a day, beginning with small doses and gradually increasing the quantity. If it makes you sick you may take less, but I do not think it will."

297. Dec. 20th. *Bigelow.* "Eruption continues the same. The patient has been bled once. The warm bath made her worse. I hope we shall make an impression on the disease by and by. We are now giving the decoction of dulcamara; we commenced with a small dose, and have carried it up to *two ounces.*"

298. Dec. 24th. *Bigelow.* "Patient says her hands are better, and her arms worse, especially the right. We are making an *experiment* with two different local applications; we have applied a cataplasm of *poppy leaves* on one arm, and an ointment of *ammonia* and *submuriate of mercury*, (*calomel*) on the other. She is still taking the decoction of dulcamara."

399. Dec. 27th. *Bigelow.* "The case seems to have assumed a chronic form. Hands are better, but arms and other parts of body worse. Dulcamara has been carried to three ounces, which is a very large dose. Patient thinks she has as much heat

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* A *poison*, better known as the *woody night shade.*

as ever in her skin. May *change* dulcamara for a *tonic*—may take one grain of the sulphate of iron made into a pill with sirup, three times a day."

300. Dec. 31st. *Bigelow.* "The medicine ordered at last visit caused sickness every time it was taken. The disease is very obstinate; when it gets better in one place it grows worse in another. Patient has been on low diet; her pulse is feeble, and there is very little action in her system. She has received but little benefit thus far from a great variety of remedies; I thought I would endeavor to make a change in her system by a change in diet, and have substituted animal food for vegetable. She is now taking wine, which does not appear to increase the heat of the skin."

301. After the class had left, Dr. ——, under whose treatment Miss B. had been previous to entering the hospital, directed my attention to the appearance of her arms, and assured me that they were worse than they had been at any previous time.

302. Jan. 3d. *Bigelow.* "Hands are better to-day, but elbows and ankles are in a bad condition. Is taking *oxymuriate of mercury*;* two grains are put into an ounce of water, and fifteen drops administered three times a day, increasing one drop at each dose until it causes sickness, or produces a puffy appearance about the eyes."

303. Jan. 7th. *Bigelow.* "Patient says she is no better; has had a poultice of poppy leaves on left hand; we are giving her oxymuriate of mercury; may apply an ointment of one part of turpentine and two of hog's lard."

304. Jan. 10th. *Bigelow.* "Eruption is about the same, and has been very troublesome on ankles, with a good deal of swelling of feet. She lies in bed principally; when sitting up, the swelling becomes much worse. She took oxymuriate of mercury, until the dose was so large as to trouble her stomach a good deal, and we were obliged to diminish it."

305. Jan. 14th. *Bigelow.* "The dose of oxymuriate of mercury has been lessened so that it does not now trouble her stomach; we will try it a little longer. We have used various external applications, as creosote ointment, white precipitate, anodyne ointment, fomentations, and tincture of cantharides; we have applied these to separate parts, but have found no advantage in using any of them; the case is one which requires constitutional treatment, rather than local applications. *She will probably get better after a while.*"

306. By the way, what does Dr. Bigelow mean by *constitu-*

* *Corrosive sublimate*, and a most deadly poison.

tional treatment, if taking *corrosive sublimate* and other *poisons* in enormous quantities, does not come under that appellation?

307. After the visit on Jan. 14th, Dr. —— informed me, what had never been stated by Dr. Bigelow, that Miss Blatchford's disease arose in consequence of having been vaccinated by Dr. Lewis of Boston. This fact was studiously concealed during our visits, and I presume it would not have been unbosomed to me, had it been known that I was opposed to the doctrines of the medical faculty.

308. Jan. 17th. The remarks of Dr. Bigelow to-day were principally a repetition of what he said on the 14th. The nurse told me that the patient had not taken any medicine for five days, and had a tolerably free diet. She was somewhat better, and her feet were not so much swelled.

309. Jan. 24th. *Bigelow.* "Hands and arms are more irritable than they were. There is some extension of the eruption. Omit creosote ointment on right leg, and apply stramonium ointment."

310. Jan. 24th. *Bigelow.* "We will pass you by to day."

311. The patient informed me that she was worse; the eruption was better in her lower limbs, but it had come out worse than ever on her back.

312. Jan. 31st. *Bigelow.* "We have left off the stramonium ointment, and now use the creosote; stimulating applications suit better than those of an anodyne character."

313. Feb. 4th. *Dr. Hale* now took the place of Dr. Bigelow in the hospital, and reported the condition of the patient. He observed, "She has a violent itching of the hands, and may try a warm bath." Here the poor girl burst into tears, and after Dr. Hale and the class had left the room, the house physician said to him, "The warm bath makes her worse; it irritates her skin; she is crying about it." Dr. Hale replied, "I did not know that; then of course we will omit the bath."

314. April 2d. The patient informed me to-day, although several weeks had elapsed since I had taken any notes of her case, that the eruption was still bad on various parts of her body, and her feet were more or less swelled. She took but little or no medicine, and did not expect to receive any benefit at the hospital. She was anxious to return home as soon as she was discharged, which she presumed would be very soon.

315. Dr. Strong, a physician of Boston, who was present during this visit, recommended the use of *Fowler's solution*, but he was told that it had been already tried without success.

316. I never saw the patient after the 2d of April, and do not know what has been her fate. I have mentioned the case at

greater length than I intended, merely to show the absurdity, and I may say *wickedness*, of the fashionable practice of physic.

317. Case of Salivation. This was the case of a lady who entered the hospital on the 19th of June. Both knee joints were much swelled. Dr. Hayward, the visiting surgeon to the hospital, said that it was owing to her having been *salivated*, and that such swellings often arose from that cause.

318. Nancy Nichols. This woman was about 25 or 28 years old. I first saw her on the 13th of Dec. Dr. Bigelow said, "The patient tells me she has been sick about five weeks; we are yet undecided about her case; don't know whether she has tubercles in her lungs or not; she requires further examination; she took a compound pill of *calomel*, *antimony*, and *opium* last night; she may take an infusion of senna to-day."

319. Dec. 17th. *Bigelow.* "The patient coughed a good deal in the night; complains of nausea; sputa chiefly a watery and mucous fluid; lungs no doubt contain tubercles; may take infusion of *rhubarb*, one ounce, *rochelle salt*, two drachms."

320. Dec. 20th. *Bigelow.* "Reports rather better. Pulse 104. Coughs rather less. Sputa contains some purulent masses. Breathing short. I presume there are tubercles in her lungs, but this is by no means certain. Took a *Dover's powder* last night; has been taking *colchicum* three times a day."

321. Dec. 24th. *Bigelow.* "Some indications of tubercles; purulent sputa; we give her a *Dover's powder* at night, and *antimony* and *barley water* through the day."

322. Dec. 27th. *Bigelow.* "Cough as usual, with purulent sputa. Complains of faintness of stomach; may apply a *blister* over that region."

323. Dec. 31st. *Bigelow.* "Something better. Has chills in the morning. Sputa not so purulent. Has commenced taking a pill of *calomel*, *opium*, and *antimony*, at night."

324. Jan. 3d. During this visit, I observed that the patient was in bed for the first time. She looked pale and debilitated, and had considerable cough. The poisons she had taken had done their work effectually. Nothing was said by Dr. Bigelow of the treatment.

325. Jan. 7th. *Bigelow.* "Reports about the same. Is taking a decoction of Iceland moss, and occasionally a cathartic."

326. Jan. 14th. *Bigelow.* "Cough is the same; has a sense of trembling and sinking at the stomach; raises purulent sputa; takes occasional cathartics, and a decoction of Iceland moss."

327. The patient was in bed to-day, and looked exceedingly pale and emaciated.

328. Jan. 17th. *Bigelow.* "Cough as usual. Has heats and chills in the evening, and perspiration at night. Takes decoction of Iceland moss, and at night a *Dover's powder.* The latter may be omitted; give her *hyoscyamus** in its stead."

329. Jan. 21st. *Bigelow.* "Has cold sweats at night; has been taking Iceland moss, but is now sick of it; may discontinue it and take *acetate of morphia.*"†

330. Jan. 24th. *Bigelow.* "Feels more comfortable, but cough and expectoration are the same. Continues the acetate of morphia. This is a case of phthisis (pulmonary consumption) with purulent expectoration."

331. Jan. 28. *Bigelow.* "You see in this cup the circumscribed masses of pus floating in water and mucus. Pulse 112; moderate perspiration in the night; much cough. Takes a solution of *morphia* at night; also *salts* and the *compound extract of colocynth* to keep her bowels open."

332. Feb. 4th. *Bigelow.* "Feels as heretofore; may take infusion of rhubarb, one and a half ounces."

333. The patient, to-day, looked more cadaverous than usual, and it was evident that she could not long survive.

234. Feb. 12th. On the assembling of the class this morning, the patient's bed was vacant; Dr. Bigelow stated that she was dead. She had paid the forfeit of her life to the quackery of the "learned" medical profession. Any comments on the treatment of her case would perhaps be superfluous. It will be remembered, however, that when she entered the hospital, it was not decided that she had pulmonary consumption, but this disease was soon developed after she began to take calomel, and other poisons; and in a little more than eight weeks she was a corpse. That her life might have been prolonged by proper management for many years, I have not the slightest doubt, if I am to judge from the success which has attended the American practice in similar cases. Nancy Nichols was not the only patient in the hospital, however, in whom I was confident pulmonary consumption had been developed by the use of poisonous drugs, together with bleeding, blistering, and the various accompaniments of the old school medical practice.

335. Paralysis or Palsy. This was the case of a lady, 40 or 45 years old, who entered the hospital on the 31st of December,

* *Henbane*, and an active poison.

† The narcotic principle of opium, and, of course, more violent in its action than the opium itself.

with palsy of the right side. She was attacked suddenly in bed, about three weeks previous to that time. At our first visit Dr. Bigelow said nothing of the treatment he was pursuing. I was informed by the nurse, however, that the only thing which the patient had been ordered to take, was *barley water*, with a little of the *sirup of orange peel*. Her case is interesting, because she was not dosed with pernicious drugs.

336. At our visit on the 3d of January, Dr. Bigelow remarked that the patient was gradually improving, and that too on the mildest treatment; but he did not state at the time what that treatment was. On the 17th of January, however, he observed in a clinical lecture, that nothing had been done for the case whatever, except to administer a little barley water and the sirup of orange peel. He had tried the *experiment*, he said, to see how it would succeed, and he was happy to find that the patient had gradually improved from the time that she entered the hospital.

337. From the specimens of practice which I have seen in the above institution, I think I may safely say that Dr. Bigelow, and his medical brethren, would succeed much better in the management of disease, if they would throw aside their poisonous drugs, and rely exclusively, as in the case above reported, on *barley water* and the *sirup of orange peel*.

338. J. P. Russell. This gentleman, aged 23, entered the hospital on the 19th of January, with disease of the hip. He was in the surgical ward, and consequently under treatment by Dr. Hayward. I know nothing of the history of his case. I first saw him on the 26th of January, when Dr. Hayward remarked, "He has been cupped in the vicinity of the hip, and has had leeches applied. His general health is good, but he is obliged to take opium at night, which has made his bowels costive. He may be cupped again."

339. During my visit on the 16th of February, Mr. Russell stated to me that his knee was stiff and considerably bent, and he asked me with a good deal of anxiety, whether I thought there was danger of its remaining stiff for life. I did not feel at liberty to answer the question explicitly, for reasons that may appear obvious to the reader, but I was fearful, notwithstanding, from the course of treatment that had been pursued, that the patient would ultimately realize his worst suspicions.

340. I saw Mr. Russell again on the 23d of February, when he told me he had been much worse for some days past. He had been cupped, but it afforded him no relief. His hip, he said, was very painful, and felt as though the joint was extensively diseased.

341. I saw nothing more of Mr. Russell, until about three months ago, when I met him accidentally at an infirmary, where he was taking courses of medicine. His limb was considerably deformed, and about three inches shorter than the other. He expressed a thousand regrets that I had not told him frankly in the hospital, that I considered his treatment injudicious, for then, said he, I should have been saved my present incurable lameness, and deformity, to say nothing of my long and painful sufferings.

ABSCESS.

342. A lad, nineteen years old, entered the hospital with a large abscess in the region of the loins. It had been forming several weeks. It was suggested that it might be connected with disease or ulceration of the spine, but this was not determined.

343. Professor Warren, who examined the case, said, "If I had such an abscess, I should do nothing for it; I should go about my business as if nothing was the matter, and make myself as cheerful as possible. I think the boy will be better without treatment."

344. The above remarks were tolerably conclusive evidence that Dr. Warren had no confidence in the employment of drugs, but nevertheless, instead of leaving the patient to nature, he ordered the use of *iodine*, in opposition, as a matter of course, to his own *conscientious scruples*. When will medical men learn to be honest and consistent?

345. Death of Miss Fitzgerald. The unexpected death of this young woman furnished another melancholy example of the danger and uncertainty of the old school practice. During our visits to the hospital for six or seven weeks, we had always found her sitting by her bed-side, without having the appearance of one who was laboring under disease; but on the 11th of February she was missing, and on enquiry, it was found that she had died suddenly the preceding night. After visiting the different wards, we were invited into the clinical lecture room, to witness a dissection of her heart. Dr. Hale, who had just taken the place of Dr. Bigelow in the hospital, made the dissection. He said he had prescribed for the patient without being fully acquainted with the case, and hence its unfortunate termination. The catamenia had been irregular, and as it was about the time for their appearance, he had ventured upon pretty active treatment, with a view to their restoration. Had he been aware of the existence of so much organic disease of the heart, he would have taken a different course.

He had given aloes, sulphate of iron, and cantharides, to re-establish the catamenial function; and contrary to his expectation, vomiting, and a great disturbance of the heart, were the consequences. He acknowledged his error, and hoped that it would be a lesson to the students and medical gentlemen around him. In a word, it was apparent, from the remarks of Dr. Hale, that he was conscious of having killed Miss Fitzgerald by injudicious management, though he was not willing to acknowledge it in so many words. I do not attach any blame to Dr. Hale, however, but to the system upon which he practises, for I presume, from all I saw of him at the hospital, he is quite as prudent and successful in the treatment of disease, as any other medical man who makes use of poisonous or deleterious agents.

BLOOD-LETTING.

346. Without pretending to give a history of blood-letting, I will remark that it was in use by Hippocrates, who flourished nearly five hundred years before Christ; and it would seem that he was quite as *heroic* in its employment as some of our modern practitioners. In quinsies, and other acute disorders, he bled in both arms at once, and in some particular cases, he opened veins in various parts of the body at the same time, as those of the feet, legs, forehead, and nostrils. He considered blood-letting pernicious in infancy and in old age, however, and had recourse to it only when the patient was strong, vigorous, and middle aged.

347. Hippocrates entertained an opinion that blood should be taken from the vein nearest to the part affected, but the Arabian physicians, many centuries after his time, promulgated a contrary doctrine. For example, they said that in pleurisy, "the blood ought to be drawn from the side opposite to the disease; and this trifling difference of opinion," observes Dr. Clutterbuck, "was the cause of great and lasting dissension in the schools of physic, and entire volumes were written and published on the different sides of the question. To such a height, indeed, was the dispute carried, that the University of Salamanca, in the fifteenth century, took part with the Arabians, and made a decree that no one should dare let blood from the side affected; and, to add authority to their decree, they endeavored to procure an edict from the emperor, Charles the Fifth, to confirm it, alleging that the contrary practice was as prejudicial to the community as Luther's heresy itself."*

* Clutterbuck's Lectures on Blood-letting, *vide* Select Medical Library, vol. iii. No. 7.

348. Preposterous as the above may appear, it has its parallel at the present day in what is termed *cross bleeding*. "This," says Magendie, in a strain of well merited satire, "is reserved for great and important occasions," and in illustration, he observes, "Suppose a case in which ordinary remedies have failed. A consultation of *medical celebrities* is of course held, and upon what do you suppose the deliberation sometimes turns? Upon the propriety of opening a vein in the right arm, and at the same time another in the left foot. I was actually, some time past," he continues, "one of a consulting party, among whom this proposition led to a discussion worthy of taking rank with the richest scenes of comedy. I do not seek to excite your hilarity; the patient was a dying man who had but a few moments to live. Who would have dreamed that in an age which judges with such severity the prejudices of our fathers, men could be found not only to tolerate, but actually to extol such superannuated practices. Is there, I would ask, such a very great difference between the employment of amulets, which have supplied such a capital butt for our gibes, and the confidence attributed to bleedings, the jets of which cross each other in the form of an X. The day will come, and may it not be far removed, when the profession will refuse to believe, that in the year of grace, 1837, conscientious practitioners of the capital of France, were found to countenance such monstrous absurdities."*

349. Blood-letting is extensively practised in the United States, and is productive of immense evil. It debilitates the system, impairs the functions of the vital organs, and lays the foundation of obstinate and incurable diseases. "In the blood is the life," says the inspired volume, and this is obviously true; for all the secretions are derived from the blood, as the bile, saliva, and gastric juice; and the minutest parts of the body, whether they consist of bone, cartilage, muscle, tendon, ligament, or any other substance, or tissue, are formed from this fluid. It is also the medium by which heat is diffused throughout the system, imparting to it the necessary degree of warmth in all the changes and vicisitudes of climate. Should the brain, through a failure of the action of the heart, cease, even for a moment, to receive its accustomed supply of blood, a state of unconsciousness would be the immediate result.

350. M. Louis, one of the great medical lights in Paris at the

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* Lectures on the Blood, delivered at the College of France in 1837–8, *vide* Select Medical Library, for 1839.

present time, has published a work on the *Effects of Blood-letting in some Inflammatory Diseases*,* which shows that he does not esteem the lancet so highly as some of his cotemporaries. He commences his work by saying, "The results of my researches on the effects of blood-letting in inflammation, are so little in accordance with the general opinion, that it is not without a degree of hesitation I have decided to publish them."

351. In his remarks on the effects of blood-letting in pleuropneumonia, (inflammation of the lungs and pleura) he says, "The cases I am about to investigate are seventy-eight in number; twenty-eight of them proved fatal; and all were in a state of perfect health at the time when the first symptoms were developed."

252. M. Louis has furnished a table, showing the effects of blood-letting when commenced on certain days after the first appearance of the disease, and in the column referring to those who were bled on the *sixth day*, we have the subjoined statistical information: The first patient was bled once, and the disease lasted thirteen days; the second patient was bled twice, and the disease lasted sixteen days; the third patient was bled three times, and the disease lasted twenty-three days; and the fourth patient was bled five times, and the disease lasted *thirty-five days*. It would seem, therefore, that the disease became obstinate in proportion to the number of bleedings; but this ratio is not uniform throughout the tables, for in one case the patient was bled only twice, and the disease lasted *forty days*. In this instance, however, it is probable that the curative powers of nature were counteracted by the administration of some poison, as tartarized antimony, which was a favorite prescription with M. Louis in inflammation of the lungs.

353. Speaking of the successful cases out of the seventy-eight, the author observes, "It appears that blood-letting has had but a very limited influence on the course of the disease. * * * The facts relative to the fatal cases confirm these conclusions, and seem still further to limit the utility of blood-letting."

354. "*Pain*," says M. Louis, "was not arrested by blood-letting, in any of the cases bled within the first four days of the disease; on the contrary, it generally increased during the succeeding twelve or twenty-four hours; and its mean duration, in proportion to that of the disease, was from six to eight days, according as the patients were bled early or late in the malady." He adds that "it was still present on the sixth day in a patient who was bled on the second day, and in this case *fifty ounces* of blood were abstracted by two venesections within forty-eight

* Translated by Dr. Putnam, and published in Boston with Preface and Appendix, by James Jackson, M. D.

hours, and on the fourth day, five or six ounces more by the application of twenty leeches over the painful part."

355. Acknowledging the comparative inutility of blood-letting, as it was employed by himself, M. Louis asks, "Should we obtain more important results, if, as is practised in England, the first bleedings were carried to syncope or fainting? This practice deserves a trial, but great success cannot, I think, be anticipated; since many cases, the history of which I have drawn up, and which were fatal, were bled to a sufficient extent. Among these was one who was bled on the day of the attack, and who nevertheless died on the sixth; the vein having been opened *five* times, and the quantity of blood lost *twelve* or *sixteen* ounces each bleeding."

356. Among the practical deductions of M. Louis, with regard to the effects of blood-letting are, that it has very little influence on the progress of quinsy, erysipelas of the face, and inflammation of the lungs, and that its influence is not more evident in the cases bled copiously and repeatedly, than in those bled only once and to a small amount. In a word, we are led to infer that blood-letting is neither of much utility in the beginning, middle, nor toward the close of an inflammatory disease. The author also remarks that in the hospital la Pitié, he has employed blood-letting in a great many cases of inflammation of the lungs, to the extent of twenty or twenty-five ounces and more, or even to fainting, and yet he has *never seen these inflammations arrested in a single instance.*

357. That no one may question the high standing of M. Louis in the medical profession, I will here enumerate a few of his titles, as they are introduced by himself in his works: Physician to the Hospital la Pitié, Perpetual President of the Medical Society of Observation, Member of the Royal Academy of Medicine of Paris, Corresponding Member of the Medical Society of Marseilles, of the Imperial Medico-Chirurgical Society of St. Petersburg, and of the Medical Society of Edinburgh; Member of the Legion of Honor.

358. Dr. Marshall Hall of London, has published a work entitled Researches Relative to the Morbid and Curative effects of Loss of Blood, which exhibits in a striking manner, though not intentionally perhaps, the horrible consequences which result from the use of the lancet. He has devoted a few chapters to an account of the *immediate effects* of loss of blood, and among these he places *syncope* or *fainting* as the most familiar, remarking that in ordinary cases "the patient first experiences a degree of vertigo, to which the loss of consciousness succeeds; the respiration is affected in proportion to the degree of insensibility,

being suspended until the painful sensation produced rouses the patient to draw deep and repeated sighs, and then suspended as before; the beat of the heart and of the pulse is slow and weak; the face and general surface become pale, cool, and bedewed with perspiration; the stomach is apt to be affected with eructation, or sickness. On recovery there is perhaps a momentary delirium, yawning, and a return of consciousness; irregular sighing and breathing; and a gradual return of the pulse."

359. Convulsions, according to Dr. Hall, are not unfrequently the immediate result of blood-letting. He mentions the following case in illustration.

360. "A physician, aged thirty-four, became affected with inflammation of the larynx, (upper part of the windpipe.) He was bled freely on two successive mornings at his own instance. In the afternoon of the second day, the disease being unsubdued, he was bled a third time, placed in a rather inclined position upon a sofa. The blood was allowed to flow until thirty-four ounces were taken. He then suddenly fell upon the floor violently convulsed; and he remained for some time afterward in such a state of syncope as to render his recovery very doubtful; being carried to bed, however, and cordials administered, he slowly recovered."

361. Dr. Hall quotes a similar case from Mr. Travers, who remarks, "Some patients cannot bear the loss of blood; it gives rise to prostration, attended with convulsions, in which the circulation fails so alarmingly as to require watching for several hours, and the repeated administration of stimulants to restore it. A very intelligent surgeon in the neighborhood of London, in bleeding a clergyman to the extent of twenty ounces, whose idiosyncracy in this respect was not known, was compelled to remain with him during the whole of that day; and notwithstanding frequent recourse to brandy, continued long apprehensive for the patient's life. He represented the convulsions, which returned in paroxysms, as resembling the puerperal (child-bed) in their severest forms."

362. In addition to *syncope* and *convulsions*, Dr. Hall asserts that blood-letting is the immediate cause, in many instances, of *delirium*, *mania*, *stupor*, and *sudden dissolution*. Of the latter, he has detailed a number of aggravated cases, but I have only room for the following.

393. "A gentleman nearly seventy years of age, the subject of frequent gouty paroxysms, whose constitution was broken down, and who was of a pallid complexion, was suddenly seized with severe pain in the side, hot skin, quick full pulse, and difficulty in breathing. A physician was consulted, who recommend-

ed the abstraction of six ounces of blood. The arm was tied up accordingly, the patient being in bed; before two ounces were taken away, his pulse sunk, and heavy perspiration came on, with faintness. The patient was placed horizontally in bed, and it was some length of time before his medical attendant deemed it prudent to leave the house.

364. "The blood taken away, manifested the usual character of inflammation, but the pain in the side was not removed. On the following morning he was again visited by his physician, who finding that the pain and other symptoms detailed were not relieved, directed the bleeding to be repeated to six ounces; this was again attempted, but before one ounce escaped, he became so alarmingly faint, that he fell back in the bed, the circulation being suspended for a length of time, and his dissolution expected to take place. Stimulants of every description which could at the moment be brought forward, were resorted to; after a considerable lapse of time, the heart's action was feebly renewed, but its power was never again restored; and the pain in his side was not relieved. From this time he *progressively sank; and in a short time expired.*"

365. Dr. Hall, in his work on *Puerperal Diseases*, remarks, "I have repeatedly known the effects of loss of blood to be mistaken for inflammation of the brain, on the one hand, and disease of the heart on the other." In a subsequent paragraph, he says, "one of the characteristics of puerperal affections, consists in the faintishness, gasping, or feeling of dissolution which sometimes follows even a slight blood-letting;" and he adds that "an *awfully sudden death has immediately ensued upon a full and* MISTAKEN *blood-letting at this critical period.*"

366. Magendie, the celebrated French physiologist, delivered a course of lectures on the blood, at the College of France, in 1837–8,* as I have already stated, in which he demonstrated in the most satisfactory manner, that blood-letting, instead of *curing* inflammatory disorders, will produce them in healthy individuals. He observes, "We are justified in proclaiming, that men who bleed without giving themselves the least uneasiness about the disorders that follow the removal of blood, both in that fluid itself, and in the different organs of the body; who look on these disorders as curable by blood-letting, while they are in reality produced by it, act with most reprehensible blindness. In simple language, they do mischief when they imagine they are doing good; and in many an instance, on their doing that mischief or

* Since translated and published in the Select Medical Library for 1839.

that good, the death or recovery of the patient depends." Again, he remarks, "The universal practice of the ordinary run of medical men, consists in opening a vein, whenever the pulse is in the least frequent at the outset of an acute disease. If recovery takes place shortly after, they maintain that they did well to bleed, for by so doing they prevented the occurrence of inflammation; if the disease follows its course, they congratulate themselves still more warmly on having let the patient's blood, and only regret their having drawn so little." In another place he says, "You must remember that the treatment by blood-letting, employed in almost every case of acute disease, but especially in pleurisy and inflammation of the lungs, *is one of the means of inducing these very diseases in healthy animals.*" To show that Magendie has blended theory with practice, to a certain extent, he further observes, "Truth to say, I bleed my patients very little, and I do not perceive that they fare a whit worse than those of my neighbors."

367. Magendie has shown that if the blood is extremely thin and watery—that is, if it contains an undue proportion of serum—it cannot circulate freely through the minute or capillary vessels, but on the contrary, stagnates within them, and is effused into the surrounding parts or organs, constituting "the various disorders," to use his own language, "which pathologists have vainly attempted to explain by the words *irritation* and *inflammation.*" In proof of his doctrine that a superabundance of serum interferes with the passage of the blood through the capillaries, he remarks, that if we endeavor to introduce water into a tube of extremely small diameter, the liquid will not enter it, no matter what force be employed; but if a certain quantity of any mucilaginous substance, as gum, or gelatin, be added to it, so as to render it more viscid, the attempt to inject the tube becomes successful at once. On the same principle he contends, that if the blood is materially changed in its composition, by disease, or otherwise, and has lost the viscidity which properly belongs to it, it cannot pass through the capillary vessels, any more than the non-mucilaginous water can pass through the minute tube. Having decided the point, therefore, that a morbid increase of the serum of the blood is a cause of inflammatory diseases, for the reasons already assigned, Magendie asserts that the greater the proportion of serum, the more violently will the inflammation be developed; and he has shown by experiments on animals, startling as it may appear to those who have not given the subject a thought, that blood-letting has a direct tendency to augment the proportion of serum, and thereby to induce various disorders, and finally death. "I am anxious," said he to his class, "to recall to your attention the

experiments we made last session on the blood. You learned, through them, the influence that fluid exercises on our organs. You saw me produce at will in animals, the majority of the striking phenomena determined by the most terrible diseases, for the relief of which, art is powerless. You saw me give rise, at my pleasure, to *inflammation of the lungs*, *scurvy*, *yellow fever*, and *typhoid fever*, not to mention a number of other affections, which, so to speak, I called into being before you."

368. Again, the lecturer remarks, "I have told you that when a first bleeding fails, a second, a third, a fourth, nay, a still greater number, are frequently had recourse to. These repeated blood-lettings not only diminish the loss of blood in circulation, but also alter its constitution. Now as aqueous drinks are the only means wherewith the patient is allowed to replace the blood he has lost, it follows that that fluid loses its proper share of viscidity and coagulability, and acquires, proportionately, a tendency to extravasation. When we observe obstruction of the pulmonary circulation supervene towards the decline of acute affections that have been vigorously treated by blood-letting, it is rational to suppose that the escape of blood from its vessels is due to its having lost its normal or healthful properties. You persist in bleeding, and the severity of the symptoms increases; it is fair to enquire if it be not these blood-lettings that hasten the fatal termination of the cases."

369. The above extract leads me to remark, that during the prevalence of the yellow fever in Philadelphia in 1793, Dr. Rush was charged by Dr. Currie and others, with having killed many of his patients by bleeding them copiously; but Dr. Rush replied that "he did not draw an ounce of blood too much, for hemorrhage *frequently* occurred *after* a third, a fourth, and in one instance *after* a sixth bleeding."* According to Magendie, however, these hemorrhages were the result of the repeated bleedings, instead of the bleedings having any tendency to check them; and it is fair to infer that Dr. Rush, and his followers, by their unhallowed use of the lancet, destroyed thousands of precious lives.

370. As a further extract from Magendie, showing the pernicious effects of blood-letting, I select the following.

371. "Here is the animal I pointed out to you in my last lecture as being affected with commencing ophthalmia (inflammation of the eye) and as presenting hemorrhagic spots on the skin, where the hair had fallen off." (The animal, it will be borne in mind, had been bled.) "To-day the eyes are in a more advanced stage of the disease—the left is unfit for exercising vis-

* Cobbett's Works, vol. xi. p. 261.

ion. The ulcerations I showed you have extended more deeply; perforation of the cornea (one of the external membranes of the eye) is perceptible in two or three places. The aqueous humor (one of the fluids of the eye) has disappeared. Do you suppose that by applying leeches round the orbit we should have succeeded in modifying the pus-like secretion, and arresting the progress of disorganization? No: so utterly absurd does the notion appear to me, that I would not so much as make the trial; nevertheless, the very treatment, which I am *unwilling to try on brutes, is daily had recourse to in the case of the human subject.*"

372. In another lecture Magendie said to his hearers, "Several blood-lettings have been practised on this greyhound—and the blood, after being deprived of its fibrine, re-injected. Besides the usual phenomena in such cases, the skin, which was perfectly healthy when we commenced, presents ulcerated patches of various sizes on the surface of his body."

373. Without making any further extracts from Magendie, I will remark, that he has done the public an eminent service, by the bold and fearless manner in which he has attacked the practice of blood-letting; and I am happy to state, that many medical men in this country, who have perused his lectures, have already thrown aside the lancet in disgust and abhorrence.

374. "For examples of boldness in the use of the lancet," says Dr. Clutterbuck, "I need only refer to the practice of some of our surgeons. In one of the great hospitals of this metropolis (London) a case occurred lately, where 128 ounces of blood (8 lbs., or 1 gallon!) were drawn at one time, in order, by inducing syncope, to facilitate the reduction of a dislocation of the thigh. The patient lived a week afterwards, and then, as is said, died of inflammation of the vein punctured."*

375. Dr. Physic, who has been styled the father of American Surgery, was attacked in 1797 with yellow fever, and was bled by Dr. Dewees to the extent of 176 ounces. What effect this loss of blood had upon his health and constitution, I shall not pretend to say, but Dr. Horner, in his Necrological Notice of Dr. Physic, remarks, "I have known him intimately since 1819, and may say he never passed a day without some sensation of pain, feebleness, and derangement in his system—sometimes a catarrh—at other times a headach—sometimes pains in his kidneys—sometimes dyspepsia—at other times dropsical swellings of the legs—and always a small, feeble, wiry pulse, irregular, and indicative of ossification, (conversion into bone) or some other change about

* Lectures on Blood-letting, *vide* Select Medical Library, vol. iii. No. 7.

the left valves of the heart. To these were added frequent exasperations of his habitual disorders—catarrh and nephritis, (inflammation of the kidney) amounting to threatening illness, and from which he recovered very slowly. * * * For several years his debility was so great, that when the business of the day was over, he had to lie down for mere animal repose, and his common hour for retiring to bed was nine o'clock."

376. Dr. Mackintosh, in his remarks on blood-letting in inflammation of the lungs, remarks, "I am not an advocate for the heroic practice of taking seventy or eighty ounces of blood at one operation—the largest bleeding I can boast of was fifty-six ounces." He adds, "I have the history of a case before me, in which *one hundred and ninety-two ounces* were taken from one individual; but I am persuaded, that if he had lost two thirds less, it would have been better for him. Several months afterwards he was weak and miserable, and it appeared very doubtful that he ever could regain his health. On one occasion, early in life, I very nearly lost a patient, from whom I had taken, at different times, in the course of four days, *one hundred and twenty ounces of blood*, but who recovered after the exhibition of *stimulants*. Within the last fifteen years, I have seen several cases where considerable injury had been inflicted by very large bleedings, the medical attendants having allowed themselves to be misdirected by the continuance of dyspnœa, (difficult breathing) *which increased after each abstraction of blood*. It was evident that this was owing to a want of sufficient blood in the system. In one instance, the patient was on the brink of the grave, with a pale sunk countenance, and cold extremities; the *strongest stimulants* were administered, along with large *opiates*, and all these cases eventually recovered."*

377. "To show the extent to which bleeding has been carried in hydrophobia," says Dr. Mackintosh, in his observations on the treatment of this disease, "I may mention a case which occurred in the practice of Professor Trolliet. The patient was bled to the extent of five pounds, when the water-dread first appeared. In a few hours afterwards, the operation was repeated to the extent of eighteen ounces, when syncope took place. In four hours subsequently to the last bleeding, fourteen ounces were abstracted; and in four hours after that, the patient died, being twelve hours from the commencement of the hydrophobia. It was remarked, that *the symptoms became more aggravated after each bleeding*."*

378. Erasistratus, a celebrated Greek physician, who lived about three hundred years before Christ, prohibited blood-letting

* Practice of Physic, 2d American edition, vol. i. p. 508, and vol. ii. p. 143.

in the treatment of diseases, and Dr. Clutterbuck, in announcing this fact, remarks that the followers of Erasistratus made many "frivolous objections to the practice of bleeding, such as that it is not always easy to discover the vein proper to be opened, and that there is even danger of opening an artery instead of a vein; that many persons fall into a state of syncope either before or after the operation; and that some have actually died of fright under it; that we cannot always tell the precise quantity of blood required to be taken in any particular case, in order to subdue the disease; and that if less than this be taken it does no good, and if more, we run the risk of killing the patient."*

379. With regard to the two latter objections, however "frivolous" they may appear to Dr. Clutterbuck, they seem to have some weight with his cotemporary, Dr. Mackintosh, who says, "No physician, however wise and experienced, can tell what quantity of blood ought to be taken in any given case. To bleed in a quantity much under that which is required to subdue a disease completely, is almost worse practice than not to bleed at all; because the patient is robbed of much strength, without destroying or decidedly mitigating the diseased action, and thereby the subsequent treatment is embarrassed."†

380. One of the arguments in favor of blood-letting is, that an individual often becomes fat by being bled frequently and in small quantities. Van Sweiten mentions the case of a woman who was bled more than sixty times in one year, and who meanwhile became extremely corpulent. It will be seen, however, that in cases such as the above, there is no actual increase of flesh, but a bloated or dropsical condition of the patient, arising from a derangement of function in the absorbent vessels; and it is well known that dropsies of an inveterate character are frequently the result of copious blood-lettings.

381. Dr. Dunglison, in his General Therapeutics, page 185, remarks, "When an individual is attacked with hæmoptysis, (bleeding from the lungs) the greatest alarm is usually felt, and in all cases it is expected, that the practitioner should have recourse to blood-letting to arrest the flow. Such is the opinion of the vulgar, and occasionally it is that of the professional attendant also. This is not, however, philosophy. Every one, who has had an opportunity of seeing many cases of bleeding from the lungs, is aware, that the flow of blood may be arrested, at a less expense

* Lectures on Blood-letting, *vide* Select Medical Library, vol. iii. No. 7.
† Practice of Physic, 2d American edition, vol. ii. p. 103.

of fluid, when due attention is paid to ventilation and to posture, than when the lancet is used. A coagulum soon forms around the ruptured or transuding vessel, and the hemorrhage ceases."

382. In suspended animation, says Dr. Currie, in his work on the art of restoring persons, apparently dead, to life, blood-letting has been generally thought indispensable. The practice, however, he adds, does not appear to have been founded upon any natural principle at first, and has been continued from the force of custom, rather than from any experience of its good effects.

383. To bleed just as reaction is about to take place, while the heart is struggling to propel the blood to the different parts of the body, as a medical professor has expressed it, is highly dangerous; and the first touch of the lancet, by weakening the already enfeebled powers of life, may seal the patient's fate, and render his recovery impossible.

384. Some of our most distinguished medical authors, even while they advocate the employment of blood-letting, are prone to speak of it as a dangerous or hazardous remedy.

385. The famous Broussais remarks, "General or local bleedings in a person who is deficient in blood generally, always produce much uneasiness, increase its accumulation in the internal organs, and often in that way give rise to convulsions and fever."*

386. A London physician says, "It is a bad principle to bleed young people; it lays the foundation for a larger quantity of blood being formed than should be."†

387. "Large and often repeated blood-letting," say the American editors of Dr. Hall's Practice of Medicine, page 87, "tends to the establishment of debility and anemia in some subjects, and of reaction or of plethora in others."

388. Dr. Hall says in the same work, page 138, "Dogs fed upon indigestible food by M. Magendie, and bled to a state of exhaustion by myself, became affected with inflammation of the eye, tending to ulceration."

389. "The ordinary remitting fevers of the temperate latitudes," says Dr. Eberle, in his Practice of Medicine, vol. i. p. 135, "often terminate in intermitting fevers before the final disappearance of the disease; and it is not uncommon for the milder varieties of the malady to assume the intermittent form at an early period of their course. This conversion of form appears to be

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* Broussais's Pathology, p. 514.

† London Practice of Midwifery, 4th London edition, p. 29.

particularly favored by blood-letting practised during the first few days of the fever."

390. Professor Lobstein, in his well known work on Blood-letting, says, "Were bleeding and mercury totally prohibited, a great many physicians would find themselves in a sad dilemma—their time easily disposed of. It is astonishing that so many physicians have fallen into this extravagance. Blood, as the most precious matter of life, is lavishingly squandered where there is no necessity; yes, often without knowledge for what purport. * * * So far from blood-letting being beneficial, it is productive of the most serious and fatal effects. Should I contribute by these remarks, to save more lives in future, and arrest this cruel practice, I shall feel that gratification which arises from the consciousness of having performed a good act. How much it is to be regretted that such an awful scourge to humanity should exist. * * * During my residence of fourteen years past in this happy country of liberty and independence, I am bound to say that in all my practice of twenty-seven years as a physician, never have I seen in any part of Europe such extravagance of blood-letting, as I have seen in this country. How many thousands of our fellow citizens are sent to an untimely grave! how many families deprived of their amiable children! how many husbands deprived of their lovely wives! how many wives of their husbands, who have fallen victims to bleeding; and the same may be said of mercury.* * * It is proved by numerous experiments, that the most simple fevers, by bleeding, become nervous or putrid, to many instances of which I can attest. * * * In nervous affections, bleeding is no remedy; I have seen, during the nine years of my residence in Philadelphia, many ladies with nervous affections, and of such, four highly respectable ladies, whose physician I had the honor to be. Their former physician, in all slight indispositions, ordered them to be bled, whereby they became more and more nervous, and they had no nervous attacks when I stopped the bleeding. I treated in a similar manner a respectable lady of Philadelphia, who was attacked with a very severe pleurisy, and I saved her without bleeding, which to many in that city was very astonishing."

391. Many frightful accidents occur in the operation of blood-letting, which deserve a passing notice. An artery may be wounded, rendering it necessary to perform a painful operation in securing it with a ligature; or a nerve may be partially cut, giving rise to excruciating pains, followed by convulsions, or locked jaw; or inflammation may occur in the punctured vein, "producing abscesses, the matter of which may sometimes become blend-

ed with the circulating fluids, and produce dangerous consequences."* These accidents, and others which I have not enumerated, are well known to physicians and surgeons, and occur much more frequently than is imagined. An interesting young lady in Philadelphia lost her arm, and subsequently her life, in consequence of being bled, and her case is only one in a great number which I could mention. Dr. Mackintosh says, it behoves physicians either to use the lancet themselves, or to see the operation properly performed, as he is *persuaded that valuable lives are often lost by neglecting these cautions.*† Dr. Mackintosh should carry his reform one step further, and renounce the lancet altogether.

LEECHES.

392. These disgusting animals are employed by the antiphlogistic doctors as a substitute for general blood-letting. Their bites are more or less dangerous, and death happens not unfrequently from the profuse bleeding which they occasion. "A child may be bled to death by leeches," says a London physician, "and an infant has been known to die under the operation of a single leech."‡

393. Boisseau, in his work on Fever, says, "We are bound in conscience here to note the fact, that leeches are capable of destroying life. In addition to sufficient evidence to be drawn from books, the writer of this has himself been a witness, in more than a single instance, to the fact. The best method of suppressing the hemorrhage, is said to be, to dip a straw in *oil of vitriol*, and let a drop run into the bite."

394. The author further observes, "that if the bleeding of leech bites become excessive, it should be checked by styptics, or, these failing, by *cauterization*, either with a sharp pointed piece of *lunar caustic*, a *mineral acid*, or *the point of a red hot wire.*"

396. Professor Bigelow used to remark in his lectures, "I have known children to be killed by the bites of foreign leeches; caution should be observed in their application, as it is extremely difficult to stop the bleeding."

396. "The bleeding from leech-bites," says Broussais, in his Pathology, page 514, "is often excessive in infants and young subjects, whose skin is full of blood, and the action of the heart

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* Cooper's Practice of Surgery, 3d American edition, p. 396.

† Practice of Physic, 2d American edition, vol. ii. p. 103.

‡ London Practice of Midwifery, 4th London edition, p. 105.

very energetic. The bleeding from the bites should therefore be arrested as soon as faintness is perceived."

397. Dr. Marshall Hall, in his remarks on blood-letting in infancy and childhood, remarks, "I must, once for all, protest against the usual plan of applying leeches in infancy, and allowing the bites to continue to bleed. Nothing can be more indefinite—nothing more replete with danger. Most of all, it is dangerous to apply leeches late at night; the bleeding may go on unobserved and unsuspected, and precipitate the little patient into a state of irremediable sinking."*

398. "If it is intended that the leech shall draw a large quantity of blood," says Dr. Hooper, "the end of the tail is cut off, and then it sucks continually."

399. It is stated in a German periodical, that the syphilis was communicated to an infant by a leech, which had been previously employed on a patient with that disease.

400. A foreign medical journal says, it is estimated that there are two hundred million of leeches consumed annually in Europe, independently of those exported to the United States, the cost of which is placed at about two million of dollars. They are principally imported from Hamburgh, and are procured from the north of Europe. People pay dearly for having their health and lives destroyed.

SCARIFICATION AND CUPPING.

401. Scarification is performed by a surgical instrument, made in the form of a box, in which are fitted from ten to twenty lancets. These, by means of a spring or trigger, are all discharged at once, and driven equally into the skin.

402. Scarification was so common among the Egyptians at one time, says Prosper Alpinus, that out of a hundred children you might meet in the street, you would scarcely find forty whose ears were not covered with cotton, on account of the scarification they had undergone.†

403. "Simple scarification," remarks Dr. Clutterbuck, "is sometimes practised as a topical remedy, on parts where the vessels run superficially, and are easy of access, as on the tonsils and other parts within the mouth. It is always a question, however," says he, "whether, in these cases, more good or harm is done by the operation, on account of the local irritation produced

* Researches on the Effects of Loss of Blood, p. 166.

† Lectures on Blood-letting, *vide*, Select Medical Library, vol. iii. No. 7.

by it. Upon this point, practitioners are found to differ; and experience, which is usually appealed to in these cases, as in many others, is not altogether so satisfactory and conclusive, as the advocates of different opinions are apt to imagine."*

404. When the physician wishes to take more blood than can be obtained by simple scarification, he makes use of what is termed a *cupping glass*, which enables him by rarefying the air within its cavity, and placing it over the scarifications, to obtain a considerable flow of blood from the wounded vessels. I need not occupy further space in describing the barbarous operation.

COUNTER IRRITATION.

405. It is well known that the medical faculty endeavor to cure one disease by establishing a new one in its stead; and this they term *counter irritation*. For instance, if a patient has inflammation of the lungs, they apply a blister externally over the affected organs, and inflame the skin; and if questioned as to the propriety of this practice, they will tell you that the *new* inflammation is intended to carry off the *old* one, and in that way they hope to effect a cure. As another example of counter irritation, I will mention a case which came under my observation about two years ago, and which I reported at that time in a medical journal, of which I was editor. The patient was a young man by the name of Gorham Clapp, residing in Boston, who was afflicted with the *hip disease*, and after being under treatment by an eminent physician for five months, without receiving any benefit, he was advised to go to the Massachusetts General Hospital. Accordingly, he entered that institution on the 20th of March, 1837, where he was ordered to take a dose of salts every other day, and on the intermediate days to be cupped, which treatment was continued for six weeks. After this, leeches were applied near the seat of the disease every other day, and the salts continued. The patient, as might naturally be expected, continued to grow worse, and was exceedingly weak and debilitated.

406. No change having occurred for the better, it was decided that an issue should be established by means of *caustic*, and accordingly several thicknesses of adhesive plaster were applied over the hip, with a space of the requisite dimensions cut out in the centre, and in this the caustic was confined by another layer of the adhesive plaster. The caustic was removed in about nine hours, and an ointment applied. In the course of two or three

* Lectures on Blood-letting, *vide* Select Medical Library, vol. iii. No. 7.

days, the flesh, which had been deadened by the caustic, came away, leaving a cavity about half an inch deep, an inch long, and three quarters of an inch wide. This was filled with dried peas, to the number of a dozen or more, and retained by bandages. Every other day the old peas were removed, and fresh ones inserted ; and this process was continued for a fortnight. The heat and moisture of the part caused the peas to swell, giving rise to excruciating pain, and the patient relieved himself occasionally by abstracting four or five of them, unknown to the medical attendants.

407. Nine weeks from the period of his entrance, he was told by the superintendant of the hospital that he was considered *well.* The patient, somewhat surprised at this information, especially as he had not been out of his bed for nine weeks, prepared to leave the institution, and was taken home in a carriage. Here he was informed that the physicians were anxious to be rid of him; that they considered his case incurable, and thought it was unnecessary for him to remain any longer under their charge.

408. Among the *counter irritants* usually employed in the antiphlogistic or old school practice, are blisters, mustard poultices, setons, issues, and moxas.

409. Blisters. These are composed of pulverized Spanish flies, and act by producing a violent inflammation. They raise the cuticle or outer skin, in the form of a blister, which is detached by the physician or surgeon with a pair of scissors; and the raw or excoriated surface is then dressed with some irritating ointment, to promote a constant discharge from the sore. Whether blisters are of any service in the treatment of disease, may be learned by the following extracts from medical authors.

410. "Within five years," says the distinguished M. Louis, "I have treated about one hundred and forty cases of pleurisy at la Pitié,* (I include here only those who were in perfect health at the time they were attacked) and I have not had recourse to blistering in a single instance."†

411. The same writer says, "I was induced to reject vesication (blistering) in the treatment of acute inflammations of the chest, because, as I have before said, an attentive study and vigorous analysis of facts, forced me to acknowledge that acute inflammatory affections, instead of preserving organs which are not the primitive seat of disease from inflammation, are in truth *an exciting*

* A celebrated hospital in Paris.

† Researches on the Effects of Blood-letting, &c., translated by Dr. Putnam. Boston, 1836.

cause of inflammation; insomuch that the more severe the primitive inflammatory affection, and the more severe the accompanying fever, the more are the secondary inflammations to be dreaded. And how then are we to believe that the effect of a blister is to check an inflammation, when the *blister is one inflammation superadded to another?*"

412. "Dr. Rush affirmed," says Dr. Dunglison, "that there was a period in fevers, when blisters might be had recourse to with advantage, and to this period he gave the name 'blistering point.' If the excitement was above this point, blisters were improper; if below, the contrary. The difficulty manifestly would be, to know this point. It is not fixed with thermometric accuracy, and, consequently, the idea of the *blistering point* fell to the ground with its distinguished professor."*

413. The same writer, speaking of what he terms the *stimulant* or *excitant* effects of blisters, remarks, "In the low conditions of the frame, in which they are conceived to be indicated, the discharge of a large quantity of the serous part of the blood, cannot fail to add to the debility more than the excitant property can detract from it; whilst they produce excessive irritation, and are, withal, transient in their operation."*

414. Dr. Joseph Comstock, in his remarks on the use of blisters in scarlet fever, says, "They sometimes put on very alarming appearances, being visited by canker, turning black, and threatening mortification."†

415. Dr. Eberle expresses the belief that blisters are sometimes useful in typhus fever, if "applied about the period when the stage of collapse is approaching, that is, about the seventh or eighth day of the fever;" but "at an earlier period," he remarks, "they are apt to increase the general irritation of the system; and at a more advanced stage, vesication tends to increase the exhaustion, and there is much danger from *gangrene* of the blistered surface."‡

416. Dr. Mackintosh recommends the application of a blister to the temple, behind the ears, or to the back of the neck, in inflammation of the eyes, but in the same paragraph observes, "In young infants the blistered surface is liable to slough (mortify) and death will so frequently follow such an occurrence, that I entertain considerable repugnance at applying a blister to a new-born child; and it is impossible I shall ever forget the fright experienced on the last occasion I applied one in purulent ophthalmia,"

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* General Therapeutics, pp. 63, 103.

† Boston Medical and Surgical Journal for May, 1839.

‡ Practice of Medicine, 4th edition, vol. i. p. 186.

(inflammation of the eye with a purulent discharge.) The case was severe; the parents had heard of the good effects of blistering, and I was urged by them to apply one. My objections were honestly mentioned, but they still insisted; and a blister was accordingly applied, with the precaution too of placing a piece of fine gauze between it and the skin; a deep slough took place, and the child made a narrow escape from death."*

417. Dr. Samuel Thomson says, "What would be thought if a scald should be caused by boiling water to remove disease? Yet there is no difference between this and a blister made with flies. I have witnessed many instances of great distress and injurious effects from the use of blisters; and believe I can truly say that I never knew any benefit derived from their use. They frequently cause strangury, and in that case they are more to be feared than the disease which they are intended to cure."†

418. Mustard Poultices. These, in medical language, are termed *sinapisms*, and are composed of flaxseed, mustard, and vinegar. They are very speedy in their effects, and "usually become insupportably painful in less than an hour." "When removed," says the United States Dispensatory, "they leave the surface intensely red and burning; and the inflammation frequently terminates in desquamation, (peeling off of the cuticle) or even blistering, if the application has been too long continued. Obstinate ulcers and gangrene also sometimes result from the protracted action of mustard, especially on parts possessed of little vitality. As a general rule, the poultice should be removed when the patient complains of much pain; and in cases of insensibility should not, unless greatly diluted, be allowed to remain longer than one, or at most two hours; as violent inflammation, followed by obstinate ulceration, is apt to occur upon the establishment of reaction in the system."

419. Professor Bigelow of Boston, said in a lecture, "I have frequently seen patients in the cholera hospitals in this city and in New York, who were groaning in the greatest distress; and upon interrogating them as to the cause, it was usually found to be a mustard poultice upon the feet, bowels, or other parts of the body.

420. Issues. These, in the words of a medical writer, are artificial ulcers, made by cutting out a portion of the skin, or destroying it with caustic, and burying a pea or some other substance in it, so as to produce a discharge of purulent matter.

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* Practice of Physic, 2d American edition, vol. ii. p. 212.

† Thomson's Guide, p. 19.

421. Setons. These are also artificial ulcers, but they are made with an instrument called the seton needle, by which a "long strip of fine linen or cotton twist" is passed through the skin, and moved backward or forward every day to keep up a constant irritation. Dr. Dunglison, in his General Therapeutics, remarks, that "issues and setons are uncleanly, by means of the discharge which they excite;" but this is not the only objection to them, for they gradually exhaust the strength of the patient, and doom him to a premature grave.

422. Moxas. These are of different kinds, but the moxa usually employed in this country, is composed of a roll of cotton wool, wrapped in cotton cloth, and impregnated with saltpetre. The moxa thus prepared is laid on the skin, set on fire at the top, and blown with the bellows till it is entirely consumed. This destroys the parts beneath, and gives rise to an ulcer, which is kept open by irritating applications. Moxa is employed by the diplomatised physicians in various diseases, as asthma, pleurisy, consumption of the lungs, and rheumatic inflammation of the joints. It was first used in savage nations, and was in perfect accordance with their rude and barbarous notions, but that it should have found favor with educated physicians in civilized countries, is truly a matter of wonder.

MERCURY.

423. Mercury or quicksilver is chiefly obtained from a red colored ore, termed *cinnabar*, and is the only metal which preserves its fluidity at ordinary temperatures. There are various preparations of this mineral, all of which are more or less poisonous. The more common of them are *calomel*, *corrosive sublimate*, *red precipitate*, and *blue pill*.

424. "When mercury is introduced into the system so as to excite its specific action," remarks Professor Eberle, "it at first increases the action of the heart and arteries; the pulse becomes quick, tense, and occasionally full; the gums become tender, accompanied with a peculiar metallic taste of the mouth and fetor of the breath. If the mercury be pushed further, the tongue, gums, and salivary glands, begin to swell; the teeth become painful and loose; the saliva flows in great abundance; small ulcerations make their appearance on the tongue, gums, and roof of the mouth; the appetite fails; occasional pains are felt in the stomach and bowels; the countenance acquires a peculiar expression, indicative of

a distressful morbid irritability of the system; and much debility and emaciation ensue. These are the ORDINARY phenomena of a regular mercurial course. Instances however occur, in which, owing to peculiar susceptibilities of the system, the action of mercury produces a train of symptoms which, so far from being salutary, are attended with much distress and danger, and permanent injury to the constitution. Palsy, epilepsy, and even death, have been known to supervene, in consequence of the action of mercury."*

425. One would scarcely think that a substance capable of producing such effects as the above, could be regarded as a very safe or salutary *medicine*.

426. "From the general tendency of mercury to produce salivation," says Dr. Good, "those who are engaged in working quicksilver mines, as those of Idria or New Spain, are almost constantly in a state of salivation; and when, which is often the case, condemned as criminals to such labor for life, drag on a miserable existence, in extreme debility and emaciation, with stiff, incurvated limbs, total loss of teeth, and equal loss of appetite, till death, in a few years, with a friendly stroke, puts a period to their sufferings."

427. "From the facility with which quicksilver evaporates," continues Dr. Good, "and combines, not only with other metals, but with almost all other substances, and especially with many of the elastic gases, a considerable degree of injury is often sustained by workmen in manufactories, in which quicksilver is occasionally employed, without their being for a long time aware of the cause. An instance of a similar kind occurred on board the Triumph man-of-war, which had received on board thirty tons of quicksilver, contained in leathern bags of fifty pounds each, that had been picked up on the shore at Cadiz, from the wreck of two Spanish line-of-battle-ships, that had been lost during a storm in March, 1810. The bags were stowed in the hold, and other low parts of the ship; but being saturated with sea-water, they soon decayed and burst. The quicksilver, thus let loose, was collected as well as it could be, and committed to proper casks; but much of it escaped into the recesses of the ship; and not a little was secreted by the sailors, who amused themselves with it in various ways. The quicksilver that had escaped unnoticed, sunk into the bilge water, became partially decomposed, and ascending soon after, amidst an intolerable stench, with the vapor of the water, coated every metallic substance in the ship with a black hue; and at the same time a general affection of the mouth took

* Materia Medica, 4th edition, vol. ii. pp. 372–3.

place among the men and officers, to such an extent, that no less than two hundred became severely salivated, and did not recover till the ship, being carried into Gibraltar, was docked and cleaned to its lowest planks."*

428. The very principle upon which mercury is administered in the treatment of disease, should be sufficient to condemn its use. It was asserted by John Hunter, and has since been quoted by various medical writers, that two different diseases cannot exist in the body at the same time, unless they occupy different structures; and as mercury is capable of producing a disease or irritation peculiar to itself, this agent is resorted to with a view of exciting a *new disease*, that it may take the place of the *old one* already existing. "Hence the great advantage," says Dr. Dunglison, "of mercury in obstinate fevers, and, indeed, in most chronic irritations. In such cases," he adds, "it is but necessary to affect the mouth, occasion mercurial fetor of the breath, falling away of the gums from the teeth, and slight irritative fever,—in order that we may produce the full remedial influence of mercury." He remarks, however, that salivation is unnecessary; that "it is now admitted by almost all to be an evil;" and that "the whole efficacy of the mercurial medication is dependent on the *new disease* which is established in the economy, detracting from, or being incompatible with, that already existing."†

429. Such doctrine as this would be regarded as a manifest absurdity, were it not countenanced by men who claim to be *learned* and *scientific;* and I am satisfied that if the people understood it in all its odious features, they would cease to employ medical men who make it the ground-work of their practice. The day, I trust, is not far distant, when the citizens of this Republic will look with distrust upon the man, who says he cannot break up or cure a disease, without establishing a new one in its stead.

430. On this subject the learned Professor Waterhouse remarks, "The regular physician finds it necessary sometimes to make *a great change* in the human frame, or to make a very strong *counter irritation*, so as to obliterate the *morbid* or *destructive* one. This he accomplishes by *quicksilver*, that is, *mercury*, in its various preparations, which, when pushed to the extent of salivation, dissolves the human fluids, on the health of which depends the vital integrity of our bodies. After the hazardous process of salivation, the physician may, perhaps, be able to say—*now I have so far* changed the morbid state of the patient, that

* Study of Medicine, 6th American edition, vol. i. p. 62.

† Dunglison's General Therapeutics, p. 99.

his disease is conquered, and entirely overcome by the powerful operation of the *mercury*. But then in what condition does he find the sufferer? His teeth are loosened, his joints are weakened, his healthy countenance is impaired, his voice feeble, and he is more susceptible of cold from a damp state of the weather. His original disorder is, to be sure, overcome, but it is by paying a great price for it. *Secret history conceals from public notice innumerable victims of this sort.*"

431. Passing over the primary effect of mercury, which is well known to be salivation, Dr. Marshall Hall observes, that its secondary effect is what Mr. Pearson has denominated the *mercurial erethismus*. This form of disease is described by Mr. Pearson as "a state of the constitution produced by mercury acting on it as a *poison*." He mentions that it "is characterized by great depression of strength, uneasiness in the region of the heart, palpitation, frequent sighing, trembling, a small, quick, sometimes intermitting pulse, occasional vomiting, a pale, contracted countenance, and a sense of coldness. In this state, any sudden exertion will sometimes prove fatal."

432. "To this affection," says Dr. Hall, "the late Dr. Bateman fell a victim, and that from the want of a prompt diagnosis. The first symptoms of the terrible malady occurred on the *ninth* day of the mercurial inunction; this was nevertheless continued to the *thirteenth*."*

433. "The *erethismus* described by Mr. Pearson," continues Dr. Hall, "is not the only *morbid* effect of mercury. This remedy, instead of producing a kindly effect on the system, and on the disease, sometimes induces a quickened pulse, with feverishness and general inquietude, a furred tongue, a harsh and intolerable feeling about the stomach and bowels, perhaps with sickness, perhaps with diarrhœa. Each dose and every form of the medicine produces these painful and untoward effects, and we are frequently compelled to relinquish the use of our most *important remedy*."*

434. "In the course of two or three years after my appointment to the care of the Lock Hospital," remarks Mr. Pearson, "I observed, that in almost every year, one and sometimes two instances of sudden death occurred among the patients admitted into that institution; that these accidents could not be traced to any evident cause; and that the subjects were commonly men who had nearly, and sometimes entirely, completed their mercurial course. I consulted Mr. Bromfield and Mr. Williams upon this

* Marshall Hall's Practice of Medicine, by Drs. Bigelow and Holmes, pp. 216, 219.

interesting subject! but they acknowledged themselves unable to communicate any satisfactory information: they had carefully examined the bodies of many who had died thus unexpectedly, without being able to discover any morbid appearances; and they confessed that they were equally ignorant of the cause, the mode of prevention, or the method of treating, that state of the system which immediately preceded the fatal termination."

435. "As the object of my enquiry was of considerable importance," continues Mr. Pearson, "I gave a constant and minute attention to the operation of mercury on the constitution in general, as well as to its effects on the disease for which it was administered; and, after some time had elapsed, I ascertained that these sinister events were to be ascribed to *mercury acting as a poison on the system*, quite unconnected with its agency as a remedy; and that its deleterious qualities were neither in proportion to the inflammation of the mouth, *nor to the actual quantity of the mineral absorbed into the body.*"*

436. We have here the most abundant proof of the power of mercury to injure the system, and produce death; and as further testimony, the reader's attention is solicited to the following extracts and observations.

437. "In persons of a highly irritable temperament," says Dr. Good, "I have known salivation produced by a single dose of calomel; and that it is sometimes caused by dressing ulcers with red precipitate, is a fact mentioned by Hildanus, and well known to all experienced surgeons. In scorbutic, scrofulous, and other debilitated habits, very small quantities of mercury will sometimes act in the same manner; and hence a considerable degree of caution is requisite in all cases of this kind. Even the wearing of a leathern girdle, or the occasional application of white precipitate or mercurial ointment to the head to destroy vermin, has often excited salivation."†

438. Dr. Bigelow of Harvard University, was in the habit of saying to his class, "I have known an ordinary dose of calomel, given as a cathartic, to produce salivation in twenty-four hours."

439. Dr. Jackson, formerly a professor in the same institution, observes, "In our practice," (alluding to that of the Massachusetts General Hospital) "calomel is rarely used, by design, to such an extent as to induce any marked or free salivation; but occasionally, it must be allowed, such an effect takes place."‡

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* Marshall Hall's Practice of Medicine, by Drs. Bigelow and Holmes, p. 217.

† Study of Medicine, 6th American edition, vol. i. p. 62.

‡ Researches on the Effects of Blood-letting, &c., by M. Louis, translated by Dr. Putnam; Preface and Appendix by Dr. Jackson. Boston, 1836.

440. Dr. Anthony Hunn, a practitioner of the old school, remarks, "Has any physician yet discovered the modus operandi of calomel? No! Can any body tell what calomel will do when taken? No! Calomel acts quite *independently* of the physician's *wish*, or *design*. At one time three grains will purge the patient nearly to death—at another time, in apparently the same situation, *one hundred* grains will produce no sensible effect."*

441. Dr. Denman says, "There is reason to think, that causes, seemingly too trifling to produce convulsions, have sometimes been equal to the effect, as I recollect two instances of women who had convulsions at the time of labor, preceded by violent headachs, brought on, as it appeared, by the use of some mercurial preparation mixed with the powder used for their hair."†

442. The wife of a distinguished clergyman in Boston, and a lady of the most undoubted veracity, informed me that she had known at least one hundred cases, in which salivation had been produced by small doses of mercury, contrary to the wishes or expectation of the attending physician. This may seem a large number to come under the observation of a lady, but her benevolent visits among the sick or afflicted members of her husband's congregation, gave her an opportunity of witnessing the bad effects of medical treatment, not commonly enjoyed by her sex.

443. I shall never forget a case of salivation which occurred in Philadelphia nine or ten years ago. The patient was a Miss Lehman, residing in Eighth street, above Arch, who was attacked with a slight dropsical affection of the lower extremities, and called in Dr. Hartshorn, a somewhat noted physician. He gave her, according to his own confession, a small dose of calomel, but not with a view of producing salivation. Nevertheless, salivation occurred in its severest form, and the patient was doomed to suffer the most indescribable agonies. Her tongue swelled enormously, and protruded from her mouth, so that she could not speak, and it was with the greatest difficulty that a small quantity of fluid could be poured down her throat from time to time, to keep her alive. Her joints also swelled, and were exceedingly painful. She lingered in this situation for several weeks, when death, with a friendly hand, put a period to her sufferings.

444. About a year ago, I accompanied Dr. Comfort of Philadelphia, to see a child of Mr. Becktel, which had been a victim to mercury. It was attacked when about five months old with ague and fever, and Dr. Small being consulted, he ordered calomel, which was given in grain doses every three days for four

* See a series of Essays by Dr. Hunn in the Southern Botanic Journal for 1837.

† Practice of Midwifery, New York edition, p. 521.

months. At the end of this time the drug was discontinued, from an apprehension on the part of the mother, that it was doing the child an injury. The little sufferer was three years old when I saw it, and the dreadful effects of the calomel were fully apparent. It was deprived of the use of its lower limbs, and in a great measure of its hands and arms. Its teeth were rotten, accompanied with a constant dribbling of saliva from its mouth, and its head rolled from side to side, varying with the movements of its body. Its lower limbs were imperfectly developed, and not more than half the usual size of a healthy child of the same age. Its intellectual faculties were impaired, and the power of speech wholly lost. It was only capable of uttering a low, muttering sound. Dr. Comfort had prescribed the use of vegetable medicines, as composition and spiced bitters, and with a considerable degree of benefit, but there was no probability that the little patient could ever be restored to permanent health.

445. I recollect an equally aggravated case which occurred in the child of a Mr. McIntire, who resides in the eastern part of Boston. At the age of six months, it was attacked with some trifling complaint, and a physician ordered it a dose of calomel. From that time it became an invalid, and was attended by different medical men, who gave it mercury and other poisons by the quantity. At length it was seized with the *hip complaint*, which has continued till the present time, the patient now being about thirteen years old. I heard from him a few months ago, and was informed that his limb on the affected side was considerably shortened and bent, and he was obliged to go on crutches. In the treatment of the case, an incision a foot long had been made in the fleshy part of the thigh, and the wound kept open by irritating applications for four months. The patient is not only a cripple for life, but his mental faculties are considerably impaired. A physician of Boston called to see him about three years ago, who attributed his afflictions to the use of calomel, and said his flesh was so poisonous that a *small portion of it would kill a dog*.

446. "Some practitioners," says Dr. Mackintosh, "trust almost exclusively to the action of mercury in yellow fever, and in India more particularly, it is deeply to be regretted that a great waste of human life has consequently taken place. Some years ago," he continues, "Dr. Haliday of the Honorable East India Company service, was, by order of the Marquis of Hastings, put under arrest, and deprived of rank and pay, for showing by most incontrovertible evidence, that in the general hospital of Calcutta, *the enormous quantity of twenty-six pounds of calomel was consumed by eight hundred and eighty-six patients*; and that under

the painful digestion of this mineral, the proportion of deaths was *one* in about *six and three quarters* of the whole sick list—whilst under a more rational treatment, the mortality was reduced about one half: in fact, the mortality bore almost an exact ratio with the quantity of calomel exhibited. After a delay of many years, Dr. Haliday was restored to his rank by the express order, more than once repeated, of the India Directors. This transaction has never been brought before the British public, but having carefully perused all the evidence, I have no hesitation in declaring that as a piece of persecution from beginning to end, there is no parallel case to be found in the annals of any free country. Wherever the story is known, it must cause a blot, never to be effaced, upon the memory of the then Governor General of India, and all his advisers, military as well as medical."*

447. "In 1796," observes the same writer, "the deaths in the West Indies under Dr. Chisholm's mercurial plan were never exceeded, amounting to nearly one half of the whole number of the troops."*

448. Dr. Clutterbuck says, "A few years back, a mercurial course was said by an American physician to cure consumption with almost certainty; but in this country, (England) the disease is almost invariably aggravated by such a course." The same writer remarks, "For a good many years past—not so many, however, but that I well recollect the introduction of the practice—mercury has been looked up to as a sort of *specific* in chronic affections of the liver, to the exclusion, not only of blood-letting, but of almost all other means. Patients, in consequence, have been doomed, almost without discrimination, to undergo torturing salivations, with a numerous train of other evils."†

449. Dr. Ware of Harvard University, said in a lecture, "Mortification of the face in children, which is often peculiar to them, is supposed to be owing to mercury."

450. Dr. Bigelow of the same institution, remarked, "I have known the tongue to be so much swelled from the use of calomel as to be pushed out of the mouth, and to remain out for three or four weeks before it could be restored. Infants are sometimes terribly salivated by it, and extensive sloughing of the mouth and gums takes place. A child will be affected by its mother's milk, if she is under the influence of mercury."

451. Dr. Good observes, "Gangrene and necrosis (death or mortification of the bones) may be the consequences of immod-

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* Mackintosh's Practice of Physic, 2d American edition, vol. i. pp. 173–4.

† Lectures on Blood-letting, *vide* Select Medical Library, vol. iii. No. 7. pp. 81, 98.

erate mercurial salivation. Large sloughs of the parts of the mouth are very common. Cullerier has seen a partial necrosis of the lower jaw produced in this manner, and, in one young woman, a complete necrosis of the upper and lower alveolary processes," (sockets of the teeth.) The English editor of Dr. Good's work remarks that he has "witnessed several melancholy examples of the same kind."*

452. Professor Thomson, in his Elements of Materia Medica, vol. i. p. 371, asserts that "mercury, in whatever form it is administered, and in whatever manner it is introduced into the living body, acts as an excitant; a *febrile state* of the body is induced, evidenced both by the condition of the pulse, and that of the nervous system; and also by an augmented secretion and excretion of urine."

453. Dr. Anthony Hunn, from whom I have already quoted, very emphatically remarks, "Calomel sometimes produces consumption, fever, rheumatism, and scrofula—it occasionally causes purging of blood,—terrible salivation, even unto mortification; it produces local diseases of many kinds, a great depression of strength, and great anxiety, sighing, trembling,—a small, frequent and sometimes intermitting pulse, frequent vomiting, paleness, a sense of shivering. It also brings on the mercurial leprosy, and mercurial syphilis."†

454. With regard to the operation of calomel upon the liver, Dr. Hunn observes, "It throws that organ into a morbid, convulsive action, and causes it to secrete an increased quantity of depraved bile, which must be evacuated." In cholera, he expresses the belief that this poison causes the force of the disease to be almost entirely expended on the liver, producing a still greater irritation in the organ than the cholera itself. But if you should succeed in affording relief by the use of calomel, he continues, "woe to the liver; death by cholera would be preferable to a miserable existence with such a liver—torn to pieces by the united action of cholera and calomel. But," he adds, "the attacks are oftentimes so violent, and the course of the disease so rapid, that calomel has not time to exercise its specific powers before the patient expires. This was the case in Lancaster, Kentucky; and it may be asked whether more than half, who are said to have been cured of cholera, do not die afterwards of *calomel*, *typhus*, *flux*, or *alvine hemorrhages*, not to mention Hooper's catalogue of *dyspepsia*, *rotten teeth*, *rheumatism*, *king's evil*, *consumption*, and other *horrible diseases*."†

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* Study of Medicine, 6th American edition, vol. i. p. 63.

† See a series of Essays by Dr. Hunn, published in the Southern Botanic Journal for 1837.

455. Professor Chapman has somewhere said, that he has known the mercurial action to develope itself after the poison had lain dormant in the system for years. I can testify to the truth of this assertion, having met with more than one instance of the kind. I recollect a gentleman who exhibited unquestionable marks of salivation, during the operation of a course of medicine, and he assured me that he had not taken a particle of mercury for five or six years previous to that time.

456. A London physician says, "There is no measure to the effects of mercury: after giving it, we can only say, we think we have cured the disease; we dont know that there may not arise a second set of symptoms a long time after."*

457. Dr. Robinson, in his Lectures, quotes the following case to show that mercury may lie inert in the body for years, and then become active.

458. "A lady, the mother of four children, in the twenty-eighth year of her age, had a bad miscarriage at the end of the fourth month. When the author was called, she was much reduced by the loss of blood, and required the ordinary palliative remedies. Three days after the first visit, she complained of a bad taste in her mouth, with soreness in her gums, and on the following day, salivation took place. On enquiring into the circumstances of her previous history, it was learned that four years before, she had, for a fortnight, a course of the blue pill, which had only slightly touched her gums, and it was solemnly asserted, that she had never again taken any preparation of mercury, and had been in general in good health. The salivation was, therefore, at first, attributed to some accidental cause; but when it was found to be proceeding with great violence, the medicines which the lady had been taking for the abortion were carefully analyzed, but they contained no mercury. The most anxious care, and unremitting attention, proved unavailing, as did all the remedies used in similar cases. The salivation, with the usual consequences of excessive emaciation, debility and irritability, continued for above twelve months; occasionally, for a day or two, it was checked; but alarming symptoms, vomiting, with threatened sinking of the living powers, supervened."†

459. It is strenuously contended by the generality of medical men, that mercury does not enter the circulation, and they tell their patients that it is only necessary to combine it with a portion of jalap, or to follow it in a few hours with a dose or two of castor

* London Practice of Midwifery, 4th London edition, p. 35.

† Lectures on Medical Botany, p. 118. Boston, 1838.

oil, in order that every vestige of this drug may be removed from the system. Even Professor Chapman of the Pennsylvania University, has lent his influence to sustain this clumsy hypothesis. "Of all the notions relating to the modus operandi of mercury," says he, "that which alleges its entrance into the circulation, *is surely the most gratuitous and absurd.*" To show the sagacity of Dr. Chapman on this point, I will make a few quotations from medical authors of standard authority.

460. "That mercury is carried into the circulation," says Dr. Eberle, "and conveyed with the blood throughout every part of the system, is demonstrated by the fact of its presence having been detected in the solids and fluids of the body, and particularly in some of the secretions. Zeller states, that he found quicksilver in the bile; and Laborde, Brodbelt, and others, mention instances in which this metal was found in the bones of persons who had died after severe and tedious mercurial courses. Dr. Hamilton detected globules of mercury in the milk of women in a state of salivation; and it is a fact well attested, that gold worn near the skin, by persons taking mercury, occasionally becomes covered with a white amalgam—a circumstance which proves the presence of mercury in the cutaneous discharges. The absorption of mercury into the circulation, may also be inferred from the peculiar metallic taste of the tongue, and the well known mercurial odor of the breath and perspiration of those who are under the specific influence of this metal."*

461. "We have the most undoubted evidence," says Professor Dunglison, "that mercury enters the blood. Dr. Colson detected it by introducing plates of polished brass into the blood, which became covered with a coating of mercury; and Dr. Christison affirms, that it has been obtained from the crassamentum (fibrine) of persons salivated, when no mercury could be detected in the serum. We know, too, that iodine enters the circulation. It was detected in the blood of persons using it medicinally, by Dr. Cantu of Turin; and as neither iodine nor mercury produces its effects on the constitution, until its use has been persisted in for some time, it is to be inferred that they act upon the economy through the medium of the blood."†

462. The same writer remarks, "If we force mercury through the skin by friction, we can affect the salivary glands, and whilst the system is pervaded by the mercury, a gold watch will exhibit by its white coating, that the mercury is exhaled by the cutaneous surface. In like manner, if the blue pill, or calomel, be adminis-

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* Treatise on the Materia Medica and Therapeutics, 4th edition, vol. ii. p. 371.
† General Therapeutics, p. 75–6.

tered in adequate quantity internally, the watch will be equally coated by the mercury. We do not know the exact condition of the exhaled metals in these cases; whether, in the case of the mercurial ointment and the blue pill, it is still oxide,—in the state of calomel;—or whether, in these instances, it is not decomposed, and given off in the form of mercurial vapor. The fact, that metallic mercury has been detected in the bodies of such as have died under its influence, leads us to presume, that the metal may be reduced, and be exhaled in the form of vapor, so as to occasion the coating in question."

463. "In Hufeland's Journal," says Dr. Good, "it is stated that a pelvis* infiltrated with mercury, and taken from a young woman who had died of syphilis, is preserved in the Lubben Museum of Midwifery."†

564. Dr. Coxe, formerly a professor in the University of Pennsylvania, quotes the following paragraph from Dr. Mead, who, he says, "stands high in the annals of medicine." "I remember," says Dr. Mead, "that I once found a quantity of mercury in the perinæum of a subject taken from the gallows for dissection, (whose rotten bones discovered what disease had required the use of it, and that, I suppose, by unction) without any marks of corrosion of the parts where it was collected." Dr. Mead also refers to others who had affirmed the same. "It is no wonder," he remarks, "if they often met with very untoward symptoms from so severe a treatment; and if (as some of them declare) they now and then found mercury in the rotten bones of their patients, who had, it may be, suffered too much both from their disease and their physician."‡

465. "In Woodal's Surgery, p. 244," says Dr. Coxe, "a reference is made to *Cardanus*, who took two ounces of crude mercury out of the head of a patient, who had been attended by himself." Dr. Coxe also refers to a French Journal, in which he says there "is an account of mercury having been detected in its metallic state in the mammary glands (breasts) of a young woman, as also in the mesentery, large intestines, and salivary glands; and reference is there likewise made to the authorities of Fourcroy, Dumeril, Orfila, and Cruveilhier, who have also found this metal in their examination of bodies, in different parts. In the same Journal noticed above," continues Dr. Coxe, "metallic mercury has even been discovered in the urine, by Dr. Canter.

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* The bony structure at the lower part of the abdomen.

† Study of Medicine, 6th American edition, vol. i. p. 62.

‡ Appeal to the Public, by John Redman Coxe, M. D. pp. 62, 63. Philadelphia, 1835.

That gentleman took sixty pounds of the urine of syphilitic patients, who had been treated by mercury—a sediment formed, and the fluid part, separated therefrom, was evaporated, and distilled at a red heat, with charcoal and carbonate of potash. It showed, however, no trace of mercury. He then treated the sediment in the same manner, and obtained more than twenty grains of mercury, exclusive of what remained in the neck of the retort."*

466. Dr. Alcott, in his remarks on the effects of poisons in small doses, says, "They appear to accumulate in the system, and break forth in terrible consequences at a future period. This may seem unaccountable to many, but the fact is indisputable, whether it can be accounted for, or not. * * * The full effects of calomel, for example, especially when taken in small doses, as in Ching's worm lozenges, and in sundry other nostrums which are frequently advertised, are not always manifested till months and years have elapsed. Thousands and millions of diseases, whose cause was not suspected, have been the legitimate fruits of seed sown long before, in the shape of lozenges, drops, cordials, pills, and conserves. Lead—white lead, and sugar of lead, in all their various forms, are well known to accumulate or remain in the system for years, and afterwards, when perhaps least suspected, break out and destroy the individual, or at least leave him miserable for life."†

467. Calomel. This, as we have seen, is a preparation of mercury, and is termed by chemists the *protochloride of mercury*, because it contains one part of chlorine, and one part of the metal. It has other names, *as submuriate of mercury*, and *mild chloride of mercury*. To show the vast consumption of this drug in the United States, Professor Bigelow stated in one of his medical lectures, that "a single druggist in the city of Boston, engaged in the manufacture of the article, exported *two tons* of it in one season to New Orleans." It is no wonder that the people in the Southern States complain of *aching bones* and *mercurial rheumatism*.

468. Corrosive Sublimate. This is the *bichloride of mercury*, and contains, as its name indicates, two parts of chlorine, and one of the metal. It is sometimes called *oxymuriate of mercury*, and is one of the most violent metallic poisons known, a grain or two of it being sufficient to destroy life. The United

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* Appeal to the Public, by John Redman Coxe, M. D. pp. 62, 63. Philadelphia, 1835.

† Health Tracts, No. 1. Boston, 1839.

States Dispensatory says, "it produces a sense of burning heat in the throat, excruciating pain in the stomach and bowels, excessive thirst, anxiety, nausea and frequent retching, with vomiting of bloody mucus, diarrhœa and sometimes bloody stools, small and frequent pulse, cold sweats, general debility, difficult respiration, cramps in the extremities, faintings, insensibility, convulsions, and death." It is used by the medical faculty in various diseases, as rheumatism, syphilis, and eruptions of the skin. The only difference between corrosive sublimate and calomel is, that the latter contains only one part of chlorine, and the former two parts.

469. Red Precipitate. This consists of small scales, of a bright red color, and is known to chemists as the *red oxide of mercury*. It is of a caustic nature, and is used by physicians as an external application in ulcers, and eruptions of the skin. "It must be cautiously applied, however," says Eberle, in his Therapeutics, "and not upon too large a surface at once, since it has been known, in common with many other external applications, to produce *dangerous effects*, by suddenly repelling the eruption for which it was employed."

470. The United States Dispensatory remarks, that *red precipitate* "is too harsh for internal use," but Dr. Eberle entertains a different opinion, and recommends it, on the authority of some German writers, as being useful in rheumatism, tetter, and enlargement of the bones.

471. Blue Pill. The *blue pill* is made by rubbing an ounce of mercury with an ounce and a half of conserve of roses, and half an ounce of powdered liquorice root, until the whole is formed into a mass. This is one of the milder preparations of mercury, but it is capable, nevertheless, of producing salivation, and all the other horrible consequences of that drug. The blue pill was a favorite prescription of the celebrated Abernethy, who, it is said, recommended it in almost every form of disease. With him it was the beginning and the end of the materia medica.

472. In every three grains of the mass composing the blue pill, there is, according to the American formula, one grain of mercury.

ANTIMONY.

473. The antimony of commerce is a brittle metal, of a bluish white color, and is chiefly obtained from an ore called the sulphuret of antimony.

474. Antimony, says Dr. Eberle, was known to the ancients, but it was not employed internally till about the middle of the sixteenth century. In the plague which ravaged Bohemia in 1562, it was extensively used. From its violent effects, however, the Medical Faculty of Paris denounced it as a *fatal poison*; and its use was prohibited in France by an edict of Parliament. In 1609, an eminent physician named Besnir, was expelled the medical faculty of Paris, for having given it to his patients; and another physician of equal eminence was prosecuted, for having sold antimonial preparations, contrary to the decree of Parliament. This wise and salutary law, however, after it had been in force about half a century, was repealed; and antimony, poisonous as it was known to be, "soon became one of the most boasted and popular articles of the materia medica."*

475. The distinguished M. Orfila, in his work on poisons, says, "The antimonial preparations occasion copious and obstinate vomiting, large evacuations by stool, great difficulty of breathing, and often such a constriction in the throat, that the patient is unable to swallow anything; and finally very painful cramps, a sort of intoxication, and a greater or less prostration of the vital forces."

476. Tartar Emetic. This is one of the preparations of antimony, and is used extensively by the medical faculty, both as an emetic, and for other purposes. It is composed of tartaric acid, antimony, and potash, and is called by chemists the *tartrate of antimony and potassa*. It is also known in common medical language as *tartarized antimony*. It is a violent poison, producing in some cases, according to Professor Ware, "long continued and ineffectual retching, spasms, failure of the pulse, coldness of the extremities, and great prostration."

477. "Experience proves," says M. Orfila, "that tartar emetic, if it does not excite vomiting, may produce death when given in the quantity of a few grains; instances, indeed, have occurred, in which an extreme prostration and debility have succeeded the administration of a single grain of this poison, when it has not occasioned any evacuation. Sometimes, on the contrary, and particularly in infants, it excites vomiting so copious and painful as to require an immediate arrest."

478. "Mixed with lard and other substances," continues the same writer, "and applied as an irritant to the surface of the body, tartar emetic may produce poisoning and death."

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* Eberle's Therapeutics, 4th edition, vol. i. p. 62.

479. Magendie injected a portion of tartar emetic into the veins of a dog, which was soon followed by vomiting, difficult breathing, and fever, and death took place in the midst of symptoms proper to inflammation of the lungs. He infers that this poison "attacks the blood chemically, and decomposes some of its elements." He employed it at the Neckar Hospital, but after a few weeks' trial, ceased to use it altogether.*

480. Dr. Heustis of Alabama, whose opinions, says Dr. Eberle, are entitled to much respect, remarks, "As far as my observation extends, I think I am warranted in saying that tartar emetic can never be prudently exhibited in the high and malignant grades of bilious fever. I am confirmed in this opinion from having seen and known so many instances of alarming, and sometimes fatal prostration produced by its exhibition. I have known a person in a high fever, with a strong and full pulse, and generally increased temperature of the body, in less than two hours after taking this medicine, to be affected with a death-like coldness; the pulse at the wrist no longer perceptible, the eye inanimate, the lips, cheeks, and extremities exhibiting the lividity of death, a cold and copious sweat exuding from the general surface of the body, and every symptom of approaching dissolution. *Frequent occurrences* of this nature, have for the last two years, almost entirely banished the use of tartar emetic from my practice."†

481. Dr. Good, in his remarks on the antimonial emetics, says, "Given in small doses, the nausea they produce is accompanied with the most deadly langour, and with an atony, (weakness) that, in numerous cases, has been succeeded with more mischief than any degree of benefit that could have been proposed by their use. 'Many in this manner,' observes Dr. Percival of Dublin, in his manuscript remarks on the volume of Nosology, 'have sunk under the nauseating doses of emetic tartar, employed, upon the hypothesis of Dr. Cullen, in low fevers. The heart of a frog is so torpified by this antimonial, as not to be excited by galvanism, which is not the case with opium. The fraction of a grain of tartar emetic, in a gouty habit, subject to melæna (black vomit) and palpitation, produced fainting to an alarming extent.'"‡

482. Dr. Jackson of Boston, mentions the case of a laborer, named Connelly, who entered the Massachusetts Hospital with inflammation of the lungs, and died in eight days afterward from the effects, as it was supposed, of tartar emetic. "The medicine was stopped," says the writer, "from an apprehension of

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* Lectures on the Blood, *vide* Select Medical Library for 1839.

† Eberle's Practice, 4th edtion, vol. i. p. 137.

‡ Study of Medicine, 6th American edition, vol. 1. p. 95.

evil, though none appeared at the time; but afterwards the patient had copious and very urgent vomiting." Dr. J. also observes, "I well remember that we feared the medicine might have contributed to the fatal issue." Again, in some general remarks on antimony, he says, "The powers of life are much depressed under its long continued use, and it has been suspected of contributing to a fatal issue of the disease for which it has been given."*

483. Professor Bigelow, in one of his lectures at Harvard University, spoke as follows of tartar emetic: "It causes long continued contractions of the stomach, inverts the action of the duodenum, and causes bile to be thrown up in vomiting. It is sometimes given in small doses to produce slight nausea, and in two or three days the patient can take ten times the quantity with which he commenced, without being affected. It is so harsh as an emetic, that we cannot give it to children with any degree of safety. I have known a small quantity of it to throw them into convulsions. Rubbed on the skin in the form of ointment, it causes pustules; and when the scabs fall off, ill-conditioned ulcers are sometimes left; I have known these to be three months in healing."

ARSENIC.

484. This is known as *white arsenic* or *arsenious acid*, and is principally obtained from cobalt ores, found in Bohemia and Saxony. It is a virulent poison, and is frequently employed for criminal purposes. Taken in any considerable quantity, says Bigelow, in his *Sequel*, "it speedily manifests its presence by a train of distressing symptoms. These are, dryness of the throat, intense thirst, a burning sensation in the stomach, gripings, vomiting, tremors, convulsions, delirium, palsy, cold sweats, hiccup, and finally death. It speedily corrodes the coats of the stomach and intestines, and leaves the whole body in a swollen and highly putrescent state. When the quantity taken is not sufficient to destroy life, it leaves the patient with a train of lingering symptoms, such as hectic, tremors and paralysis."

485. The following case of poisoning by arsenic is quoted by Dr. Christison from Henke's Journal of Medical Jurisprudence: "A young man who obtained an arsenical solution from an old woman, to cure ague, was attacked, after taking it, with vomiting; and after loud

* Researches on the Effects of Blood-letting, etc., by M. Louis; translated by Dr. Putnam. Preface and Appendix by Dr. Jackson. Boston, 1836.

cries and incoherent talking, he fell into a deep sleep, and perished in convulsions, in five hours."

486. Improbable as it may seem to the non-professional reader, arsenic is given internally by the medical faculty in a great variety of complaints, as ague and fever, chronic rheumatism, cancer, ulcers, affections of the bones, periodical headach, and nervous and cutaneous diseases. How far it exercises a medicinal influence, may be judged from its specific effects, which are "a general disposition to dropsy, swelling of the face and eyelids, a feeling of stiffness in these parts, itching of the skin, tenderness of the mouth, loss of appetite, and uneasiness and sickness of the stomach." When these effects are produced, says the United States Dispensatory, it "*must be immediately laid aside.*" Instead of removing disease, therefore, arsenic, like all other poisons of the old school materia medica, tends directly to produce disease, and this is the grand principle upon which it is prescribed. Of the fallacy of this doctrine I have spoken heretofore, and need not dwell upon it here.

487. A medical man once informed me that he gave arsenic to a patient with the ague and fever, which he could not remove by any other treatment, and though the disease disappeared in a short time, the patient was soon after attacked with general dropsy, and ultimately died. I presume a majority of the *cures* by arsenic are similar to the above; the old disease is supplanted by a new one, which, in a majority of instances, proves inevitably fatal.

488. Among the various preparations of arsenic, are the *tasteless ague drops*, and *Fowler's solution*, both of which are dangerous poisons. It enters into the composition also of various cancer plasters, which are vended by quacks, and which not unfrequently destroy the lives of those who are foolish enough to employ them.

OPIUM.

489. This powerful narcotic is the juice of a species of poppy, and is sent to this country in large quantities from India, Persia, Egypt, and Asiatic Turkey.

490. "Opium," says Dr. Christison, "produces three leading effects. It acts on the brain, causing congestion and profound sleep; on the general nervous centre as an irritant, exciting convulsions; and on the muscles as a direct sedative. It is poisonous to all animals. * * * On man the effect of a small dose

seems to be, in the first instance, to stimulate. The action of the heart and arteries is increased, and a slight sense of fulness is caused in the head. The effects of a full medicinal dose, which is three grains of solid opium, or a drachm of the tincture, are in general a transient excitement and fulness of the pulse, followed very soon by torpor and sleep, which terminate in six, eight, or ten hours in headach, nausea, and a dry tongue. * * * The symptoms of poisoning with opium, when it is administered in a dangerous dose, begin with giddiness and stupor, generally without any previous stimulation. The stupor rapidly increasing, the person soon becomes motionless, and insensible to external impressions; he breathes very slowly, generally lies quite still, with the eyes shut and the pupils contracted; and the whole expression of the countenance is that of deep and perfect repose. As the poisoning advances, the features become ghastly, the pulse feeble and imperceptible, the muscles excessively relaxed, and unless assistance is speedily procured, death ensues. If the person recovers, the stupor is succeeded by prolonged sleep, which commonly ends in twenty-four or thirty-six hours, and is followed by nausea, vomiting, giddiness, and loathing of food. * * * Another symptom of poisoning with opium is delirium, which occurs now and then, with convulsions."*

491. "On some individuals," says the United States Dispensatory, "opium produces very peculiar effects, totally differing from the ordinary results of its operation. In very small quantities it occasionally gives rise to excessive sickness and vomiting, and even spasm of the stomach; in other cases it produces restlessness, headach, and delirium; and we have known it, even in large doses, to occasion obstinate wakefulness. The headach, want of appetite, tremors, etc., which usually follow, in a slight degree, its narcotic operation, are uniformly experienced by some individuals to such an extent, as to render the use of the medicine very inconvenient."

492. Again, says the Dispensatory, "An occasional effect of opium, which has not yet been alluded to, is a disagreeable itching or sense of pricking in the skin, which is sometimes attended with a species of miliary eruption. We have found the effect to result equally from all the preparations of this narcotic."

493. Opium diminishes sensibility, and conceals or cloaks up a disease, but does not remove the cause upon which it depends. It is frequently used in cough, rheumatism, and similar complaints,

* Manual of Practical Toxicology, pp. 206-7-9. Baltimore, 1833.

but people do not seem to be aware that the temporary relief which it sometimes affords, is owing entirely to the stupifying effect it has upon the brain and nervous system. It also diminishes appetite, impairs digestion, and gives rise to costiveness. A medical writer says, if it be taken at night, the individual will be feverish, and complain of headach in the morning.

494. "In chronic diseases," said Professor Bigelow, in one of his lectures, "we give opium to mitigate the symptoms without any hope of effecting a cure; but if life should be unfortunately prolonged for several months, the dose must be increased till we are obliged to give a very large quantity; the patient becomes peevish and fretful under its influence, and various bad symptoms are apt to arise. Hence, opium is an evil in such cases, but not a necessary evil, for it need not be employed."

495. Individuals who have made free use of opium, are liable, while undergoing a course of medicine, to be affected with delirium. I have met with several cases of the kind; and in one of these, the patient assured me he had not taken a particle of the drug, in any of its forms, for more than a year. This can only be explained upon the supposition that opium, like mercury, remains dormant in the system, (455 *et seq.*) and is roused into action by the renovating influence of our mode of practice. A young lady of my acquaintance, who had taken an immense deal of laudanum for a nervous disorder, was delirious during three successive courses of medicine. This, however, is a very rare occurrence, delirium not generally manifesting itself more than once, or twice at the furthest.

496. Morphia. This is obtained from opium, and is the poisonous principle of that drug. A single grain has been known to produce death. Sprinkled upon a wound, it produces the same effect as though taken into the stomach. Professor Bigelow stated in one of his lectures, that a girl came to the Massachusetts Hospital with an obstinate nervous affection; he blistered the back of her hand, and ordered the application of morphia, commencing with two grains, and gradually increasing the quantity till the desired effect was produced. After the second application, the apothecary applied one or two scruples. Dr. Bigelow went to the hospital by accident, and found the girl completely narcotised; she was stupid, breathed only ten or twelve times in a minute, and would have died had he not removed the plaster, and made efforts to recover her."

497. Laudanum or *Tincture of Opium.* This is prepared by dissolving an ounce and a quarter of opium in a pint of alcohol. Twenty-five drops of this is equivalent to a grain of the drug. Children are often killed with it by inconsiderate parents. "Laudanum, when long kept, with occasional exposure to the air," says the United States Dispensatory, "becomes thick, in consequence of the evaporation of a portion of the alcohol, and the deposition of opium. If given in this state, it often acts with unexpected energy; and cases of death have resulted in infants from its use in doses which would have been *entirely safe* (*!*) if the tincture had been clear."

498. Paregoric. This is composed of opium, benzoic acid, oil of anise, liquorice, clarified honey, camphor, and diluted alcohol. It is employed by the medical faculty in asthma, consumption, hooping cough, and various other affections. Mothers also give it to their infants to procure sleep. It is not so strong as laudanum, but its use is more or less pernicious. Two other preparations of opium, similar to paregoric, are *Bateman's drops*, and *Godfrey's cordial.*

499. Dover's Powder. This consists of opium, ipecacuanha, and sulphate of potash, rubbed together into a very fine powder. It is used by medical men in a great variety of diseases.

500. Black Drop or *Acetated Tincture of Opium.* This is prepared with opium, vinegar, and alcohol. One drop of it is equal to three of laudanum. It is given, says the United States Dispensatory, when "laudanum or opium itself produces *unpleasant effects*, such as *nausea and vomiting*, *intense headach*, and *great nervous disorder.*" The *black drop*, therefore, must be an important agent in the hands of the diplomatised physicians. When the stomach rejects the other poisonous preparations of opium, they can give this with impunity.

COLCHICUM OR MEADOW SAFFRON.

501. This plant grows in the temperate parts of Europe, and is cultivated occasionally in the United States. The root is used by the medical faculty in gout, rheumatism, dropsy, asthmatic and other affections. "When fresh," says Dr. Eberle, "it possesses extremely active powers, producing, according to the observations of Stœrk, when taken in a dose less than a grain, 'a

burning heat and pain in the stomach and bowels, strangury, tenesmus, thirst, total loss of appetite,' and in larger doses, violent and even fatal effects."*

502. Speaking of the use of colchicum in gout, Dr. Eberle remarks, "It is not allowed on all hands to be always a very safe remedy. It is stated by very high authority, that although generally speedily effectual in removing the local symptoms of pain and inflammation in gout, it has a tendency 'to leave the disposition to the disease much stronger in the system, leading to still more calamitous results."*

503. "Several cases of poisoning with the meadow saffron," says Dr. Christison, "have occurred in consequence of its too free use in the treatment of gout. A case is noticed of a man who took, by mistake, an ounce and a half of the tincture, and died in forty-eight hours, after suffering much from vomiting, acute pain in the stomach, colic, purging, and delirium."†

MINERAL ACIDS.

504. The principal of these are the *nitric* and *sulphuric*.

505. *Nitric acid* is obtained from *saltpetre*, by the action of sulphuric acid, and is known to the people by the name of *aqua fortis*. It produces "a burning heat in the mouth, gullet, and stomach; acute pain; abundant eructations; nausea and hiccup. Soon after, there occur repeated and excessive vomiting, the vomited matter having a peculiar odor and taste; swelling of the abdomen, with exquisite tenderness; a feeling of coldness on the surface; icy coldness of the extremities; a small depressed pulse; horrible anxieties; continual tossings and contortions; extreme thirst. The breath becomes very fetid, and the countenance exhibits a complete picture of suffering. The cases are uniformly fatal."‡

506. The lips, and "inside of the mouth, are generally shrivelled, and often more or less corroded. As the poisoning advances, the teeth become loose and yellowish, and finally they change to a brown color. The matter vomited is mixed with shreds of membrane, which resemble the coats of the stomach. The duration of this variety of poisoning, is commonly between half a day, and two or three days, though life is sometimes pro-

* Eberle's Therapeutics, 4th edition, pp. 292, 294.
† Manual of Practical Toxicology, p. 275. Baltimore, 1833.
‡ United States Dispensatory, 4th edition.

longed for a week or fortnight. * * * The shortest duration of any case on record is two hours."*

507. If the stomach be examined after death, it will be "found extensively disorganized, and the other viscera in the abdomen sometimes inflamed."

508. Aqua fortis applied externally, "operates as a strong caustic, and irritates, inflames, and corrodes the skin."

509. *Sulphuric acid*, better known as *oil of vitriol*, acts upon the human system very similar to the above, and does not, therefore, require a separate consideration.

510. In poisoning from these acids, says Dr. Christison, cases occur in which the symptoms above described abate in violence, and a lingering death ensues "from organic disease of the stomach and bowels. The patient becomes affected with general fever, dry skin, spasms and pains of the limbs, difficult breathing, tension of the abdomen, salivation, and occasional vomiting, particularly of food and drink. Afterwards membranous flakes are discharged by vomiting, and the salivation is accompanied with fetor. These flakes are often very like the mucous membrane of the stomach and intestines; and such they have often been described to be. More probably, however, they are of adventitious formation; for the mere mucous coat of the alimentary canal, could not supply the vast quantity that is discharged. Sometimes worms are discharged dead, and evidently corroded by the poison. Digestion is at the same time deranged, the whole functions of the body are languid, and the patient falls into a state of marasmus, which reduces him to a mere skeleton, and in the end brings him to the grave—the vomiting of membranous flakes continuing to the last. Death may take place in a fortnight, or not for months. In one case the patient lived eight months."*

511. Dreadful as are the effects of nitric and sulphuric acids, medical men prescribe them in a dilute state in various diseases, as debility, night sweats, loss of appetite, ague and fever, and bleeding from the lungs. Aqua fortis, diluted with water, says the United States Dispensatory, "forms a good acid drink in febrile diseases, especially typhus." During my visits at the Massachusetts Hospital, I noticed that aqua fortis was frequently prescribed. In the French hospitals, they administer what is termed *sulphuric lemonade* in fevers, which consists of sulphuric acid, water, sugar, and I believe some other ingredients.

512. When the above acids are employed, says Dr. Eberle,

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* Manual of Practical Toxicology, pp. 52–3, 54. Baltimore, 1833.

they should be *sucked through a quill*, (233) that they may not *corrode* or *injure* the teeth; but he suggests no provision whereby the delicate coats of the stomach may be protected from their violent or dangerous effects.

PRUSSIC ACID.

513. Prussic or hydrocyanic acid, says the United States Dispensatory, "is the most deadly poison known, proving, in many cases, almost instantaneously fatal. One or two drops of the pure acid, are sufficient to kill a vigorous dog in a few seconds. Notwithstanding its tremendous energy as a poison, it has been ventured upon in a dilute state as a medicine. When given in medicinal doses gradually increased, it causes a peculiar bitter taste; increased secretion of saliva; irritation in the throat; nausea; disordered respiration; pain in the head; giddiness; faintness; obscured vision, and tendency to sleep. Occasionally salivation and ulceration of the mouth are produced."

514. "The application of a drop or two of prussic acid to the eye or tongue of a dog," says M. Orfila, "is sufficient to produce death in one or two minutes."

515. Birds have been speedily killed by being exposed to the vapor of prussic acid. A French physician took a teaspoonful of the acid in a dilute state, and soon fell down insensible, with difficult breathing, bloated countenance, and locked jaw. Professor Bigelow, in one of his lectures, called the attention of his class to the uncertain operation of this poison as a remedial agent. He recollected cases in which a very slight increase of the dose had caused sudden death. He said it had been recommended by some writers in hooping cough, but he had known it to be administered to children without any good effect, till they were thrown into convulsions.

516. In one of the Parisian hospitals, prussic acid was given in immediate succession to seven epileptic patients, in an over dose, and they all instantly died, the first one expiring by the time the poison was administered to the last.

517. Miss Landon, the poetess, was killed by taking prussic acid, which was prescribed by her physician as a *medicine*.

518. Among the diseases in which medical men employ prussic acid, are hooping cough, asthma, tightness of the chest, pulmonary consumption, and pains or spasms of the stomach.

WHITE VITRIOL.

519. White vitriol or *sulphate of zinc*, is composed of sulphuric acid and zinc, and is used by the diplomatised physicians as an emetic. They also employ it in minute doses in various affections, as dyspepsia, ague and fever, epilepsy, and hooping cough. "The *morbid appearances* after poisoning with sulphate of zinc, taken internally," says Dr. Christison, "have been described as follows: The stomach and intestines, but particularly the intestines, were found contracted—their outer surface healthy—the inner membrane of the stomach grayish green, with several spots of effused blood, and greenish, fluid contents—the inner membrane of the small intestines similarly spotted—the rest of the body quite natural. The poison was detected in the body, not only in the contents, but likewise in the coats of the stomach and intestines."*

BLUE VITRIOL.

520. This is the *sulphate of copper*, and is obtained by evaporating waters which hold it in solution. It is an active emetic, and is used by physicians in cough, ague and fever, chronic diarrhœa, and various other diseases. The dose for an emetic, as directed in medical books, is from two to five grains, but Dr. Bigelow, in his *Sequel*, remarks, "I have rarely found the stomach of a female patient capable of retaining a quarter of a grain, and have often seen vomiting produced by a much smaller quantity." Physicians, therefore, who give two grains, or more, at a time, incur the risk of doing serious mischief, if they do not in some instances kill their patients. The United States Dispensatory observes, "Orfila cautions against the giving large doses of this salt as an emetic in cases of poisoning, as it is apt, from its poisonous effects, to increase the mischief. Upon the whole, such is the activity of sulphate of copper, that it ought to be exhibited with the greatest caution." The same work, speaking of the *combinations of copper*, says, they produce, when taken in doses sufficiently large, "a coppery taste in the mouth; nausea and vomiting; violent pain in the stomach and bowels; frequent, black and bloody stools; small, irregular, sharp, and frequent pulse; faintings; burning thirst; difficulty of breathing; cold sweats; paucity of urine; violent headach; cramps, convulsions, and finally death."

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*Manual of Practical Toxicology, p. 146. Baltimore, 1833.

GREEN VITRIOL OR COPPERAS.

521. This is the *sulphate of iron*, and is given by the medical faculty in scrofula, hemorrhage, cold sweats, obstruction of the menses, fluor albus, and other complaints. "In large doses," says the United States Dispensatory, "it is apt to produce nausea and vomiting, and griping of the bowels; and if its use be too long continued, it injures the stomach." Dr. Christison remarks, "Two drachms of the sulphate of iron will sometimes prove fatal to dogs, either when administered internally, or when applied to a wound; and it has likewise been known to act injuriously on the human subject. A case is related of a girl, who took as an *emmenagogue*, an ounce of the *sulphate* dissolved in beer, and who was seized in consequence with colic pains, and constant vomiting and purging for seven hours."*

SQUILL.

522. The squill is a plant which grows on the seacoast of Spain, France, Italy, Greece, and the other countries bordering on the Mediterranean. It has a very large bulb or root, which is frequently employed by the old school physicians. In the recent state, it "abounds in a viscid, very acrid juice, which causes it to inflame and even excoriate the skin, when much handled. It is expectorant, diuretic, and in large doses emetic and purgative. In over doses it has been known to occasion hypercatharsis, (excessive purging) strangury, bloody urine, and fatal inflammation of the stomach and bowels."†

523. The root of the squill, says Dr. Christison, "causes sickness, vomiting, diarrhœa, gripes, and bloody urine, when given in over doses. It has likewise produced narcotic symptoms. An instance is mentioned of a woman, who died from taking a spoonful of the root in powder to cure tympanites," (distension of the abdomen with wind.) She was immediately seized with violent pain in the stomach, and in a short time expired in convulsions. The stomach was found every where inflamed, and in some parts eroded. Twenty grains of the powder have proved fatal; and a quarter of an ounce of the sirup of squill, which is a common medicinal dose, has been known to cause severe vomiting and purging."‡

* Manual of Practical Toxocology, p. 161. Baltimore, 1833.
† United States Dispensatory, 4th edition, 1839.
‡ Manual of Practical Toxicology, pp. 272-3. Baltimore, 1833.

524. Among the numerous preparations of this plant, is the *sirup of squill*, which is so frequently given to children in croup, and other diseases of the respiratory organs.

STRAMONIUM OR THORN APPLE.

525. This is a well known plant, with large leaves, and a very rank smell. It grows by the road-sides, near houses, and in the suburbs of villages, where the soil is rich. It is a poisonous herb, and is therefore esteemed by the medical faculty as an article of their materia medica. "It usually causes more or less disturbance of the brain, indicated by vertigo, headach, dimness or perversion of vision, and confusion of thought, sometimes amounting to slight delirium or a species of intoxication." Taken in doses sufficiently large to produce death, it causes "heartburn, excessive thirst, nausea and vomiting, a sense of strangulation, anxiety and faintness, partial or complete blindness with dilatation of the pupil, vertigo, delirium of a furious, or whimsical character, tremors of the limbs, palsy, and ultimately stupor and convulsions."*

BELLADONNA OR DEADLY NIGHTSHADE.

526. This is the *atropa belladonna* of botanists, and is a native of Europe. Every part of the plant is poisonous, and acts upon the system with great violence. It causes dryness of the mouth and throat, intolerable thirst, retching, vertigo, and delirium. The latter, says Dr. Christison, is generally extravagant, and mostly of a pleasing kind, being accompanied with laughter, or constant talking. "Sometimes the state of the mind resembles that of a somnambulist, as in the instance of a tailor who was poisoned with a belladonna injection, and who for fifteen hours, though speechless and insensible to external objects, went through all the customary operations of his trade with great vivacity, and moved his lips as if in conversation."

527. The delirium is followed, sooner or later, by stupor. "The pupil is dilated and insensible to light, the face red and tumid, the mouth and jaws spasmodically affected, the stomach and bowels insusceptible of impressions, in fact the whole nervous system prostrate and paralyzed. A feeble pulse, cold extremities, subsultus tendinum, (twitchings of the tendons) deep coma,

* United States Dispensatory, 4th edition, 1839.

or delirium, and sometimes convulsions, precede the fatal termination."*

528. Belladonna applied to the eye, has the effect to dilate the pupil, and improve the vision temporarily where it is deficient; hence it is frequently employed by ignorant quacks, who go about the country under the name of oculists, seeking to impose upon the credulity of the people. They make an application of the plant, and the patient, who has been partially or wholly blind, is restored to sight; but by the time the *oculist* has pocketed his fee, and escaped to some other part of the country, he finds himself as blind as ever.

IPECACUANHA.

529. Ipecacuanha is the root of a plant growing in Brazil, and also, according to Humboldt, in New Granada. It is the most harmless emetic employed by the medical faculty, but is nevertheless not without objectionable properties. It is frequently harsh in its operation, and in "full doses," says Dr. Bigelow, in his *Sequel*, "inverts the action of the duodenum, producing discharges of bile." It often leaves the patient in a weak or debilitated state, which is not the case with lobelia inflata. It is also purgative, acting violently, in some instances, on the bowels, and hence it cannot be employed with safety in consumption, typhus fever, or any low form of disease.

530. The emetic property of ipecacuanha resides in an alkaline principle called *emetin* or *emetia*, "ten grains of which," says Dr. Eberle, "have been found sufficient to destroy animals in twenty-four hours; and on dissection, the mucous membrane of the whole tract of the alimentary canal, as well as of the respiratory passages, exhibits marks of strong irritation. It is said also to manifest narcotic powers. When given so as to excite vomiting, it generally leaves the patient in a very drowsy disposition."†

IODINE.

531. Iodine, which is obtained principally from sea-weeds, was first discovered in 1812, and since that time has become a prominent article in the old school materia medica. It is a highly pernicious drug, and has no doubt destroyed a great many lives.

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* United States Dispensatory, 4th edition, 1839.

† Eberle's Therapeutics, 4th edition, vol. i. p. 60.

It occasionally induces salivation, and "in an over dose," says the United States Dispensatory, "acts as an irritant poison. In doses of two drachms administered to dogs," continues the same authority, "it produced irritation of the stomach, and death in seven days; and the stomach on dissection was found studded with numerous little ulcers of a yellow color."

532. "Iodine," says Dr. Marshall Hall, "appears to exert a singular power over absorption, which is said to have sometimes led to wasting of the mammæ, (breasts) or the testes, during its employment as a remedy."*

533. "In *medicinal doses*, such as a quarter of a grain, frequently repeated," says Dr. Christison, "it is a dangerous poison, unless its effects are carefully watched. For in consequence of absorption and accumulation in the system, it produces, when long used, some very singular and hazardous symptoms; and like mercury, foxglove, and some other poisons, it may remain in the body for a considerable period inactive, and at length begin to operate suddenly. The symptoms which it then occasions, are sometimes irritation, incessant vomiting and purging, acute pain in the stomach, loaded tongue, rapid and extreme emaciation, violent cramps, and small frequent pulse. These symptoms may continue many days, and even when subdued to a certain extent, vomiting and cramps are apt to recur for months.

534. "Among the leading effects of iodine," continues Dr. Christison, "when slowly accumulated in the body, the following have been summarily specified,—absorption of the fat; increase of all the excretions; dinginess of the skin, with frequent clammy sweats; hurried, anxious breathing; diuresis, and an appearance of oil floating in the urine; increased discharge of feces, which are usually bilious, but free of mucus; increased menstrual discharge; swelling of the superficial veins, and lividity of the lips; feebleness of the pulse, with a superabundance of serum in the blood; impaired digestion, and diminished secretion of saliva and mucus. The affection thus induced has been termed *iodism*."†

535. Among the various diseases in which the systematic physicians employ iodine, are swelling or enlargement of the glands, scrofula, nervous affections, palsy, gleet, fluor albus, and dropsy of the abdomen. They use it both internally and externally.

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* Practice of Medicine, by Drs. Bigelow and Holmes, p. 77.

† Manual of Practical Toxicology, p. 64. Baltimore, 1833.

CANTHARIDES.

536. Cantharides or Spanish flies, are applied externally by the diplomatised physicians to raise a blister, and given internally in typhus and malignant fevers, dropsy, asthma, cutaneous diseases, pulmonary consumption, and so on to the end of the chapter. Of their acrid or poisonous character, we may be convinced by perusing the following extract from Orfila.

537. "Applied to the skin, or introduced into the stomach," says he, "cantharides often occasion serious accidents which may be followed by death. The symptoms which arise when they have been swallowed, are, an unpleasant and nauseous smell; a very disagreeable, acrid taste; burning heat in the stomach, and other parts of the abdomen; frequent vomitings, which are often mixed with blood; copious and more or less bloody evacuations from the bowels; violent pain in the abdomen, especially about the pit of the stomach; obstinate and very painful priapism; heat in the bladder; great difficulty in passing the urine; sometimes the latter is entirely suppressed, and when the patient succeeds in passing a few drops, it is with the greatest difficulty and pain; sometimes it is mixed with blood; the pulse is frequent and hard; in some cases it is impossible to make the individual swallow drinks—they are rejected with horror; the jaws are tightly closed; at length dreadful convulsions, a general stiffness, and delirium, manifest themselves, and death hastens to close the scene."*

538. Mrs. Gove of Boston, was in the habit of stating in her lectures on Anatomy and Physiology, that she knew a female with fluor albus, to whom cantharides were administered by direction of her physician, and the patient went on increasing the dose from time to time, until she took the enormous quantity of *one thousand drops a day.*

DIGITALIS OR FOXGLOVE.

539. This is a beautiful but poisonous plant, which grows wild in the temperate countries of Europe, and is cultivated in the United States as an ornament in gardens. It is described by Professor Chapman as a *narcotic sedative*, and from its effect in weakening the action of the heart, it reduces the pulse from the ordinary standard to 50, 40, or even 30 strokes in a minute. It also diminishes the temperature of the body; Dr. Currie remarks,

* Orfila on Poisons, pp. 75–6. Boston, 1826.

that repeated doses of it have reduced the heat to 89 degrees, which is 10 or 11 degrees below the healthy standard.

540. "When administered in quantities sufficient to bring the system under its influence," says the United States Dispensatory, "it produces a sense of tightness or weight with dull pain in the head, vertigo, dimness or other disorder of vision, and more or less confusion in the mental operations." It also gives rise in some instances to hoarseness, salivation, disturbance of the bowels, nausea, and even vomiting. "A peculiarity of the digitalis," continues the Dispensatory, "is, that after having been given in moderate doses for several days, without any apparent effect, it sometimes acts suddenly with an accumulated influence, endangering even the life of the patient. It is, moreover, very permanent in its operation, which, having once commenced, is maintained like that of mercury, for a considerable period, without any fresh accession of the medicine. * * * In numerous instances death has resulted from its incautious employment."

541. Digitalis is used by the diplomatised physicians in catarrh, asthma, difficulty of breathing, rheumatism, hemorrhage, and a wide range of febrile and inflammatory diseases. They formerly regarded it as a specific in consumption; but do not now esteem it so highly in that complaint, and Dr. Parr has even asserted that it is more *injurious* than *beneficial.* (208)

542. Professor Chapman expresses the belief that digitalis is occasionally useful in the early stages of consumption, but he says "even here it proves exceedingly precarious, and very often is manifestly injurious, by prostrating strength, and accelerating the progress of the disease. Like mercury, and some other articles of the materia medica, it seems, in many instances of consumption, to exchange its *medicinal* for a *poisonous* action on the system, and whenever this happens, we have a train of affections induced, which hurry the case to a fatal issue."*

NUX VOMICA.

543. This is the fruit of a tree growing in the East Indies, and is one of the most powerful and destructive of all known poisons. Nevertheless, it is used by the medical faculty in various disorders, as ague and fever, mania, epilepsy, hydrophobia, rheumatism, gout, dysentery, fluor albus, palsy, scrofulous sores, and chronic eruptions. It is a narcotic, and acts upon the brain and nerves, producing insensibility, and powerful muscular con-

* Chapman's Therapeutics, 6th edition, vol. ii. p. 177.

tractions, similar to those in *locked-jaw*. It is frequently employed to kill dogs, and causes in them "great anxiety, laborious and confined breathing, nausea, retching, tremors, violent convulsions, and frequently death." In the human subject, as in animals, the muscles become rigidly fixed from the use of this poison, and death is the inevitable result.

544. *Strychnia* is the active principle of nux vomica, and is generally used instead of the drug itself. Professor Ware of Harvard University, told his class that he saw a patient with tetanic symptoms, whose death, he had every reason to believe, was occasioned by an over dose of this article.

545. Some of the medical faculty entertain strange notions with regard to the action of nux vomica. Dr. Chapman says, "What is very singular, it is declared, that by a sort of elective affinity, the action of the medicine, when it is given in the proper dose, is directed to the affected limb, leaving all the sound parts untouched, and this is apt to take place in proportion as the limb is deprived of sensation and motion."*

546. This brilliant conception is well worthy of the profession with which it originated.

NITRE OR SALTPETRE.

547. Nitre or saltpetre, called by chemists *nitrate of potassa*, is found in a natural state in earths, the fissures of calcareous rocks, and in caves. Large quantities of it come to us from India, and it is also obtained in considerable abundance in various parts of the United States.

548. Nitre is one of the "*cooling remedies*" of the orthodox physicians, and is much used by them in febrile and inflammatory diseases. It is somewhat similar in its action to digitalis, weakening the action of the heart, and thereby lessening the heat of the body, and the frequency of the pulse. It is so effectually "*cooling*" in some instances, as to deprive the patient of motion and life. One of its common preparations, is *sweet spirit of nitre*, which is formed by mixing two pounds of saltpetre with a pound and a half of the oil of vitriol, in a glass retort, and adding nine pints and a half of alcohol; a gallon of the liquid is then distilled, and an ounce of potash added to it, which constitutes the preparation in question.

549. "Notwithstanding the opinion of many physicians," remarks M. Orfila, "nitre is poisonous to man and other animals,

* Chapman's Therapeutics, 6th edition, vol. ii. p. 180.

unless vomited up. It gives rise to obstinate, sometimes bloody vomitings, to active inflammation of the stomach, and of course to the whole train of symptoms which are the consequences of such inflammation. It is to be remarked particularly, that it affects the nervous system, and frequently occasions a sort of intoxication, a palsy of the limbs, and convulsions."*

550. Dr. Christison says, that nitre appears to have a two-fold action on animals, the one irritating, the other narcotic. "An ounce and a half killed a dog in ninety minutes, when the gullet was tied, and a drachm killed another in twenty hours. Death was preceded by giddiness, slight convulsions, dilated pupils, insensibility, and palsy. After death, the stomach was externally livid, and internally reddish black. When nitre was applied externally to a wound, it excited violent inflammation, passing into gangrene, but without any symptoms which indicated a remote or indirect operation."

551. With regard to its effects on man, Dr. Christison remarks, "In the quantity of a drachm, or a drachm and a half, recently dissolved in four ounces of water, and repeated every ninety minutes, it was found that the third or fourth dose caused chillness, stinging pains in the stomach, and over the whole body. These sensations became so severe with the fourth dose, that it was considered unsafe to attempt a fifth. Two cases which were actually fatal have been described, the one caused by an ounce of the drug, and the other by an ounce and a half. In the latter, the symptoms were those of the most violent cholera, and the patient died in two days and a half; in the former, death took place in three hours, and in addition to the symptoms remarked in the other, there were convulsions, and twisting of the mouth. In both, the pulse failed at the wrist, and a great tendency to fainting prevailed for some time before death. Similar effects have been remarked in several cases which have been followed by recovery."†

552. The following case of poisoning by nitre, is detailed by Dr. Christison: "A woman, after swallowing an ounce of the drug, instead of Glauber's salt, lost the use of her speech, and the power of voluntary motion; she then became insensible, and was attacked with tetanic spasms. This state lasted till the next day, when some amelioration was procured by copious sweating. It was not, however, till eight days after, that she recovered her speech, or the entire use of her mental faculties; and the palsy of the limbs continued two months."†

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* Orfila on Poisons, p. 65. Boston, 1826.

† Manual of Practical Toxicology, pp. 86–7. Baltimore, 1833.

553. It is a common practice to apply saltpetre to pork and beef to preserve them, and there is no doubt that the meat, cured in this way, is more or less injurious to the system. Rafinesque speaks of it as highly pernicious.

554. Dr. Samuel Thomson remarks, that of all the poisons he ever undertook to expel from the human body, saltpetre has proved to be the most difficult.

ERGOT OR SPURRED RYE.

555. *Ergot* is a term applied by the French to grains of rye of a morbid growth, which resemble the spur of a cock. They are of a dark color, unpleasant taste, and brittle texture. Bread made of grain, containing much of the ergot, is highly poisonous. The effects which are thereby produced, are thus described by M. Orfila. "The affection begins," he observes, "by a disagreeable sensation in the feet, a kind of pricking; severe pain in the stomach, and a desire to vomit soon come on; the hands and the head are affected; the fingers are so forcibly contracted that the strongest man can hardly straighten them, and the joints appear dislocated. The sufferer utters acute cries, and is tortured by burning pains in the hands and feet. Heaviness of the head and apparent intoxication succeed to these pains; the eyes become veiled by a thick mist, and the individual is blinded, or sees objects double; the mental faculties are deranged; mania, melancholy, or drowsiness manifests itself; the intoxication increases, and the body is bent backward so as to form an arch; the mouth is filled with a bloody, yellow, or greenish froth; the tongue is often injured by the violence of the convulsions, and is sometimes so swollen as to interrupt the voice, embarrass the respiration, and produce a great salivation.

556. "When ergot has been taken in a large quantity, or for a very long time," continues M. Orfila, "the disorder commences with a very acute pain and intolerable heat in the toes. The pain rises, gains possession of the foot, and mounts upward on the leg. The foot soon becomes cold, pale, and livid; the coldness rises upon the leg, which is very painful, while the foot has become insensible. These pains are more acute in the night than in the day. There is thirst, but the patient does not lose his appetite, and the vital functions are performed regularly. He cannot move nor support himself on his feet. Violet spots and blisters soon appear, gangrene displays itself in all its horrors, and extends up to the knee. The leg falls off at the joint, and leaves to view a bright red wound, which heals up readily, unless the patient, being

badly fed, living in cold and moisture, and sleeping in a bed infected with gangrenous matter, imbibes anew the putrid effluvia."*

557. Professor Chapman says, "By a series of well conducted experiments, Dr. Charles Byrd has shown that pigs, ducks, and fowls, eating food containing the ergot for a week or two, acquire a gangrenous state, by which the former lose their hoofs, and the latter their bills."†

558. Ergot is given by the old school physicians to women in labor, to facilitate the expulsion of the child. The mode in which it acts, says the United States Dispensatory, is, to "produce a constant unremitting contraction and rigidity, rather than that alternation of spasmodic effort and relaxation which is observable in the natural process of labor. Hence, unless the os uteri (mouth of the womb) and external parts are sufficiently relaxed, the medicine would be likely to produce injury to the child by the incessant pressure which it maintains. Such in fact has been the observation of numerous practitioners, and the death of the infant is thought not unfrequently to result from the injudicious employment of the medicine."

559. The ergot, however, does not only endanger the life of the infant, but also that of the mother, for the violent uterine contractions which it excites, may lead to a rupture of the organ, or cause a dangerous hemorrhage, which the practitioner cannot arrest.

560. Ergot, administered in the usual doses, has no effect, it is said, on the system of the male. Its whole force, remarks Dr. Chapman, is directed exclusively to the uterus. "Given to pregnant animals," he continues, "it never fails, in a short time, to occasion abortion; and in women not with child, some uneasiness about the womb is generally experienced after taking it."†

561. Ergot is a most dangerous article, and should be excluded from the practice of every humane physician.

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* Orfila on Poisons, pp. 131–2. Boston, 1826.

† Elements of Therapeutics, 6th edition, vol. i. pp. 339, 341.

PART THIRD.

VEGETABLE MATERIA MEDICA.

INTRODUCTION.

562. By *materia medica* is understood a treatise on those substances which are employed in the cure of disease. The remedies mentioned in this work, as worthy of the notice and approbation of the public, are derived entirely from the vegetable kingdom, and are devoid of poisonous or deleterious properties. The classification which I have adopted, was the only one of a convenient character which suggested itself to my mind. I have made six principal divisions, consisting of *emetics*, *stimulants*, *astringents*, *tonics*, *nervines*, and *purgatives;* and under these heads I have described the more important and useful herbs, according to their properties; and referred the others to the miscellaneous department, in a subsequent part of the treatise, introducing them in alphabetical order. At the end of the work, I have inserted a chapter entitled "Recapitulation of the Materia Medica," comprising the divisions already named, with some others of a secondary character, which I did not think expedient to introduce into the body of the treatise. This arrangement will prove a convenient one for the reader, and will enable him to ascertain the different plants which may be used for a specified purpose, without travelling over the whole range of the materia medica. For instance, if it is desirable to know how many emetics there are, it is only necessary to refer to that head in the *recapitulation*, and so of the tonics, nervines, diuretics, or any other class of remedies.

563. I have but rarely spoken of the chemical analysis of plants, because I believed with Cullen, that it would be of "no use in explaining or ascertaining the virtues of medicines." The only proper mode of testing the value of a remedy, is by trying its effects on the living body, and if it be found to act in harmony with the laws of the animal economy, it may be regarded as a safe and useful medicine. Chemical analysis is always vague and uncertain. Cullen says that those who devoted themselves at one time to this pursuit, "soon perceived, that substances of very different, and even of opposite qualities in medicine, gave out in a chemical analysis, very much the same products, and it was therefore also perceived, that these analyses hardly threw any light upon the medicinal virtues of the substances treated in that manner."*

564. The term *medicine*, I have employed in its legitimate sense, meaning by it any substance or agent which is capable of curing disease; but the medical faculty interpret it as synonymous with *poison*, and we hear them speak very gravely of opium, calomel, and prussic acid, as medicines. This, however, is an abuse of language, for as it is the tendency of a *poison* to generate disease, it cannot with any propriety be termed a *medicine*.

565. "To know the name of a plant, and to be able to ascertain its place in the Linnæan system," says Dr. Waterhouse, "is in the opinion of many, to be a botanist, although such a person may be entirely unacquainted with its structure, and ignorant of its peculiar or medical properties." Rosseau, in his Letters on the Elements of Botany, observes, "I have always thought it possible to be a very great botanist, without knowing so much as one plant by name." This leads me to remark, that while the medical profession, with all their boasted science, have neglected the study of botany, at least so far as it relates to the properties of indigenous plants, it has received the warm and earnest attention even of uncivilized man. Bosman, in his Description of the Coast of Guinea, speaking of the different herbs employed by the natives, says, "I have seen several of my countrymen cured by these medicines, when *our own physicians were at a loss what to do.*" Again he says, "I have several times observed the negroes cure such extensive and dangerous wounds with these herbs, that I have looked on with amazement."

566. Le Vaillant also, in his Travels into the Interior Parts of Africa, gives an interesting account of the use of vegetable remedies by the savages of that country. Upon one occasion

* Cullen's Materia Medica, 3d Amer. edition, vol. i. p. 24. Philadelphia, 1808.

they cured him of a violent attack of quinsy, after he had given up his case as hopeless. His tongue and throat were so swelled that he could only speak by signs; and his breathing became so much impeded that he expected to be suffocated. In the meantime, he was visited by a party of savages, who, feeling an interest in his situation, pledged themselves to cure him. He had at this time despaired of his life for nearly a week. The remedy was a hot local application of a certain herb. It was also to be used as a gargle. The poultice was renewed several times in the night, and the gargle still more frequently repeated. When day appeared he was greatly eased. He could breathe more freely, and the swelling and inflammation of the throat were abated. By the third day he found himself cured. He then went out to examine the plant by which he had been restored to health. Nothing in the country, says he, was more common; it grew all round the camp, and was to be met with in every direction. He describes it as a species of sage, about two feet high, with a pleasant smell, and balsamic taste.

567. Le Vaillant, abounding in gratitude, no doubt, for his unexpected cure, and regretting that so few of the plants which cover the surface of the globe, should be unknown, says, "If there be any of real importance to us, we have been almost always indebted to savages, or even to beasts, for their discovery."

568. "The art of healing among the Sumatrans," says Marsden, in his history of that country, "consists almost entirely in the application of simples, in the virtues of which they are *surprisingly skilled*. All the old men and women in the country are physicians, and their *rewards depend upon their success*." Marsden also says, "The Sumatrans have a degree of botanical knowledge that surprises an European. They are in general, and at a very early age, acquainted not only with the names, but the qualities and properties of every shrub and herb amongst that exuberant variety with which their country abounds."

569. Leaving these rude people, and bestowing a momentary glance upon the medical faculty, how great do we find the contrast. The latter, instead of employing simple vegetable remedies in the treatment of disease, not only make use of violent and dangerous poisons, but also adopt the most nonsensical modes of practice that can be imagined.

570. "It is not much more than one hundred years," says Dr. Dunglison, in his General Therapeutics, "since the doctrine of curing the scrofula or king's evil by the *royal touch*, was implicitly credited, and not unfrequently followed. The first English sovereign, who touched for the affection, was Edward

the Confessor, who lived in the middle of the eleventh century, and the last that encouraged it, was Queen Anne, who died about the commencement of the last century. One of the very last subjected to the degrading mummery, was the illustrious Dr. Samuel Johnson, who, by the advice of Sir John Floyer, a *celebrated physician*, was carried to London in 1712, where he was actually touched by Queen Anne, but without effect."

571. "The illustrious Bacon," continues the same writer, "believed in the virtue of charms and amulets; and Boyle thought the thigh-bone of an executed criminal, a powerful remedy in dysentery. Celsus advises the warm blood of a recently slain gladiator, or a certain portion of human, or horse flesh, for the cure of epilepsy; and remedies of this description are said to have been actually exhibited for the cure of epileptics, in the poor-house of Haerlem, by Boerhaave, who lived so recently as the middle of the last century."

572. Again, observes the writer, "Calculi found in the stomach of different animals, and at one time generally presumed to have the power of warding off contagious diseases, are *still* found in the pharmacopœias of Amsterdam, Brunswick, Spain, and Wirtemberg. A distilled water of young swallows, exists in the pharmacopœias of Manheim, as an anti-hysteric, and anti-epileptic. *The wood-louse is in most of the European pharmacopœias, as a remedy in dropsy and asthma.* The powder of the dried frog, is in the pharmacopœias of Spain, and Wirtemberg, as an anti-hydrophobic; the powder of the human skull in the same pharmacopœias, as an anti-epileptic; the dried liver of the mad dog, and that of the wolf, in the pharmacopœia of Wirtemberg, as an anti-hydrophobic; the Egyptian mummy, in those of Spain and Wirtemberg, with the hoof of the stag, formerly regarded as a specific in epilepsy; besides many other articles equally absurd."

573. Sir Henry Halford, in his account of the deaths of eminent persons, says, he has "seen a prescription in which a portion of the human skull was ordered, in a powder, for Sir Nicholas Throckmorton."

574. The United States Dispensatory for 1839, which is the standard authority of medical men in this country, speaks of the *spider's web* as a useful remedy in intermittent fever, periodical headach, asthma, hysteria, and other diseases, remarking that, "according to Dr. Robert Jackson, it is superior to bark or *arsenic* in the cure of intermittent fevers." Dr. Chapman and Dr. Eberle, in their respective works on Therapeutics and Materia Medica, have highly extolled its virtues. "It is affirmed," says the Dispensatory, with all the gravity in the world, "that the

web of the field spider is inefficacious, while that collected in the cellars of houses, and similar places, has *extraordinary medical virtues.*" "Spiders themselves," continues the same authority, "were formerly employed in the treatment of ague and fever, and the application of the web to the cure of this disease, is not a measure of recent date."

575. An oil obtained from the liver of the cod-fish, is spoken of in the Dispensatory as a remedy in various affections. The same authority recommends *cuttle-fish bone*, and *ox gall*, as remedial agents. After this, we need not laugh at the physicians of Wirtemberg for using the dried liver of a mad dog, as a cure for hydrophobia.

576. Such is medical practice at the present day, according to the pharmacopœias and elementary works on medicine, and though we may be disposed to ridicule the idea of employing horse flesh, the bones of executed criminals, woodlice, frogs, human skulls, dried livers, Egyptian mummies, spider's web, and even spiders themselves, as agents in the cure of disease, they are no doubt much less deleterious than the thousand and one poisons in daily use by the physicians. I would rather eat a dozen frogs than be salivated with calomel, or feast upon an Egyptian mummy for a month, than take opium, tartar emetic, arsenic, or any of those fashionable poisons in their ordinary doses.

577. Before closing my introductory remarks, I will observe, that, although a few well selected plants are all-sufficient for the cure of disease, yet there is an advantage in having a somewhat extended knowledge of the vegetable productions of our country, as this will enable us, in cases of emergency, to administer to the wants and necessities of the sick, when our accustomed remedies are not at hand. I will mention a case in point. While traversing the woods of New Jersey, on a botanical excursion, I was accosted by a woman who came out of a cottage, and enquired whether I was a physician. She was led to this conclusion from the fact that she had frequently seen medical men from Philadelphia, rambling the woods in that section, in search of plants. She said her husband was very ill, and desired me to see him. I found him in bed, with all the symptoms of a violent fever. His skin was hot and dry, and his tongue covered with a thick fur. His head also ached violently. The disorder commenced with a pain in the face, for which a poultice of pipsissewa leaves were applied to the back of the neck, the object being to draw the pain in that direction. This was the advice of a colored woman living near the patient, and she no doubt borrowed the notion from the routine, antiphlogistic physicians. The poultice, however, irri-

tated the skin, and the patient's wife removed it, and substituted a fly blister, which she happened to have in the house. Between these two applications, the back of the neck became extensively ulcerated, and had an offensive smell. Wishing to afford the suffering man every relief in my power, I went out and gathered some plants, consisting of pennyroyal, fleabane, blue vervain, and leaves of the sumach, which I found in the course of half an hour's ramble. I employed the blue vervain as an emetic, which cleansed the stomach effectually, and administered a tea of the fleabane as an injection, which I was enabled to do by means of a bladder and pipe. The patient now began to perspire. I gave him pennyroyal tea to drink, in any quantity he pleased, and washed the sore on the back of the neck with soap suds, followed by a tea of sumach leaves. This rendered it tolerably clean, and divested it of its unpleasant smell. I then applied a poultice of bread and milk, with a small portion of ginger, which I found in the house, directing that it should be renewed two or three times a day, and the sore washed each time as already mentioned. The patient was now quite comfortable, and I left him with orders to continue the treatment until the fever was subdued. In a month or six weeks, I passed near the cottage, on another botanical excursion, and was told by his wife that he recovered soon after my departure. Now had he been bled, and dosed with poison, how different might have been the result! Instead of a speedy and effectual cure, he might have been stretched upon the bed of sickness for months, and his little family, in the meantime, suffering for want of the common necessaries of life. I do not make these remarks with a view to reflect discredit upon physicians, but with the hope that they may be induced to change their practice, and place more reliance, than they ever have done, upon the vegetable productions of our country.

578. Dr. Chapman, in his Therapeutics, observes, "It is more than probable, that on some Alpine height, or along the margin of some stream that pervades our wide-spread continent, there blooms many a plant, wasting its virtues on the desert air, which, were it known, might be peculiarly adapted to the various forms of disease, and capable of reducing the lengthened catalogue of the *opprobria medicorum*."

579. Let me add, that this golden dream has already been realized by thousands, nay, millions of the intelligent people of this country, while the medical faculty still continue to adhere to their favorite dogmas and long cherished delusions, ignorant, as they were in the days of Celsus, of the first principles of the healing art.

PROXIMATE VEGETABLE PRINCIPLES.

580. These are numerous, and of very different kinds. They are not all to be met with in every plant, or in every period of vegetation. I shall describe those only which are of a prominent medicinal character.

581. Gum. This is one of the most abundant proximate principles in plants. It exudes spontaneously from the peach, plum, cherry, and other trees, and is obtained by making incisions into their trunks and branches. It is soluble in water, but insoluble in alcohol, or oil. It is precipitated by the addition of alcohol to its watery solution. No proper distinction exists between gum and mucilage; the former, however, differs from *resin*, as will be explained hereafter.

582. Gum, in a state of watery solution, is soothing to the stomach and bowels, and is therefore useful in many forms of disease. It is sometimes employed as a medium to combine balsams, resins, or oils, with water.

583. Oils. Vegetable oils are divided into two classes, the *fixed* and *volatile*.

584. *Fixed oils* are found in various parts of plants, but more particularly in the seeds, and are obtained by bruising the seeds, and submitting them to pressure, so as to force out the oil, or by boiling them in water, and skimming off the oil as it rises to the surface. The term *expressed oil*, is generally used as synonymous with *fixed*, but it is incorrectly applied, for the volatile oils are sometimes obtained by expression. The fixed oils, in the pure state, have but little taste or smell. They are insoluble in water, and sparingly so in alcohol. They do not evaporate even at the boiling point of water, and hence the term *fixed* in contradistinction to that of *volatile*—the volatile oils passing off in vapor at a low temperature. The fixed oils combine with alkalies, and form soap. By exposure to the air, they generally become thick and rancid. They freeze at various temperatures, olive oil becoming solid at about 32 degrees of Fahrenheit, and linseed oil continuing fluid at 4 degrees below zero.

585. *Volatile* or *essential oils*, exist in all aromatic plants, and give to them their odor or fragrance. They are usually procured by distilling the plants which contain them, with water; but in some instances they are obtained by pressure, as from the bergamot, and the rind of the lemon, and orange. Their taste is aromatic and pungent. They are soluble in alcohol, and slightly so

in water. Dissolved in the former, they constitute essences. They evaporate at a low temperature, and are speedily converted into vapor at the heat of boiling water.

586. Volatile oils, says the United States Dispensatory, are frequently adulterated with the fixed oils, turpentine, and alcohol, and sometimes a volatile oil of little value, is added to one which is more costly. In the latter instance, the taste and smell will afford some clue to the fraud. The fixed oils may be discovered by the permanent stain which they leave on paper, while that occasioned by a pure volatile oil, disappears entirely when exposed to heat. If alcohol is present, the oil becomes milky when agitated with water.

587. Volatile oils should be preserved in small, well-stopped bottles, entirely filled with the oil, and excluded from the light.

588. Resins. These are obtained chiefly from the vegetable kingdom, either by spontaneous exudation, or from incisions made into vegetables affording juices which contain this principle. They differ from gums in being insoluble in water, but soluble in alcohol, and the essential oils. They melt at about the temperature of boiling water. The existence of a resin in a vegetable is discovered by infusing it in alcohol; this dissolves the resin, if any is present, and it can then be precipitated from the solution by the addition of water. *Rosin* is a well known resin, which is separated from the oil of turpentine by distillation. Copal, of which varnish is made, is another resin. This principle is sometimes associated with gum, and is then termed a *gum-resin*. Under this head, aloes and myrrh may be ranked. The gum-resins, as a general thing, are most effectually dissolved in equal parts of water and alcohol.

589. Resins are employed in making ointments, plasters, and similar preparations.

590. Balsams. These are vegetable juices, consisting of essential oil, resin, and benzoic acid. They have a strong odor, and a pungent taste. Water will not dissolve them, but they are readily soluble in alcohol, from which they are precipitated by the addition of the former. They are usually thick, and tenacious, but become concrete by age. The balsam of the silverfir is one of the medicines recommended in this work.

591. Camphor. This well known substance is found embedded in the trunk of a tree growing in Sumatra and Borneo, and is also contained in lavender, sage, peppermint, and other plants. It is soluble in alcohol, but not in water, though it

communicates its smell to the latter. It is useful, sometimes, as an external application.

592. Tannin. Tan or tannin, is the astringent principle of plants, and is well known as the substance employed in tanning leather. It combines with the hides, and renders them firm and tough. It exists plentifully in oak and hemlock bark, and in vegetables which are astringent to the taste, as bayberry, pond lilly, and marsh rosemary. It has the property of uniting with animal jelly, and forming a substance insoluble in water. Vegetables containing tannin are among the most valuable employed in the healing art.

593. Acids. There are a large number of vegetable acids, but those most commonly mentioned in works on materia medica, are the acetic, malic, citric, oxalic, benzoic, tartaric, and gallic.

594. *Acetic acid* or vinegar, is generally the product of fermentation, but exists already formed in the sap of some plants. Wine, cider, and beer, are capable of affording vinegar by passing through what is termed the *acetic fermentation.*

595. *Malic acid* exists in the juice of apples.

596. *Citric acid* is often associated with the malic acid in fruits, but exists in a purer form in the juice of the lime and lemon, from which it is extracted. It is present also in the juice of the strawberry, and garden currant, imparting to them their acid taste.

597. *Oxalic acid* is found in a number of plants, and particularly in the *oxalis acetosella* or *wood sorrel.* It is a fatal poison, producing death in some cases in ten minutes. Chrystallized oxalic acid bears a resemblance to Epsom salt, and is sometimes sold by mistake for this article in the drug stores. Death frequently occurs from this cause.

598. *Benzoic acid* is found in the vegetable balsams.

599. *Tartaric acid* is contained in the juice of the grape, combined with potash. It is also found in other fruits. It is obtained for domestic use from a substance denominated *tartar*, which collects on the inside of wine casks, during the fermentation of the wine. This, being purified, is termed *cream of tartar*, and by a chemical process is converted into the tartaric acid of the shops. This acid, dissolved in water and sweetened, is sometimes used as a substitute for lemonade. The *soda powders* which are vended by druggists, consist of twenty-five grains of tartaric acid, and half a drachm of bicarbonate of soda, put up in separate papers. An effervescing draught is formed by dissolving

each powder in a separate portion of water, and mixing the solutions.

600. *Gallic acid* is found in vegetables possessing astringent properties, and was at one time supposed to be the principle of astringency, instead of the tannin, with which it is combined. It is an ingredient in ink, and is extensively used in coloring black.

WEIGHTS AND MEASURES.

601. *Weights.*

20 grains, ...	1 scruple.
3 scruples, ...	1 drachm.
8 drachms, ...	1 ounce.
12 ounces, ...	1 pound.

602. A moderately heaped tea-spoonful of green lobelia, weighs 40 grains; of brown lobelia, 44 grains; of cayenne, pure, 59 grains; of bayberry, 56 grains; of unicorn root, 56 grains; of golden seal, pure, 56 grains; of lady's slipper, pure, 48 grains; of skull cap, 38 grains, and so of the various roots, herbs, and barks, according to their bulk, or density.

603. *Measures.*

8 fluid drachms, ...	1 fluid ounce.
16 fluid ounces, ...	1 pint.
2 pints, ...	1 quart.
4 quarts, ...	1 gallon.

604. A gill is equal to four fluid ounces, or the half of a common half pint tumbler.

605. *Another Scale.*

A tea-spoonful is nearly equal to a fluid drachm.
Six tea-spoonfuls are equal to a fluid ounce.
A table-spoonful is equal to three tea-spoonfuls.
Ten table-spoonfuls are equal to a tea-cupful.
Three tea-cupfuls are nearly equal to a pint.

606. If it is desirable to make very nice distinctions in quantity, it will be necessary to procure a *graduated measure*, which can be purchased at the glass, or drug stores, in any of our principal cities.

COLLECTING, DRYING, AND PRESERVING PLANTS.

607. Instructions on this subject will be given, when necessary, in describing the different plants, but a few general hints in a connected form, will be of service here.

608. Roots should be collected in the spring before the sap rises, or in the autumn after it descends. They are to be freed from dirt, deprived of their decayed or useless parts, and dried in the sun, or in a warm, airy room. Artificial heat, varying from 60 to 100 degrees, may be employed, if necessary. If roots are large, or juicy, they should be split, or cut into slices, before attempting to dry them. If the bark of the root only is wanted, as in the bayberry, it should be peeled off, or separated in some convenient manner, and the woody fibre thrown away. *Annual* roots should be collected just before the flowers appear, and *biennial* roots either in the summer of the first year, or in the spring of the second. After the roots are dried, they should be packed in drawers, covered boxes, or barrels, where they will not be exposed to the damp. It should be borne in mind, that they lose their strength, if ground or pulverized a long time before required for use.

609. Barks are collected in the spring and autumn, and if requisite, deprived of their outside coat, as in the elm and poplar. The bark of young trees is generally the best. After it is detached, it should be dried in the same way as roots, using the precautions to keep it out of the rain, and not expose it to a damp atmosphere.

610. Herbs should be gathered in clear weather, when there is no dew or moisture upon them, and spread thinly upon the floor of a chamber or loft, where there is a free circulation of air. In the process of drying, they should be frequently turned.

611. Herbs are generally in the greatest perfection just before or during the flowering period. If dried in the open air, they should not be left exposed to the rain, or dew, as this would be likely to change their color, and impair their virtues. If the atmosphere continues damp for any length of time, they may be dried with a gentle heat from a fire or stove; after this, they are usually put into boxes, or cannisters, and excluded from the air. Plants which are exceedingly volatile, should be preserved in well stopped jars. Sumach berries, and other medicines which are in danger from worms, or insects, require to be kept in covered glasses.

612. Leaves are mostly collected when they are full grown. They are to be dried and preserved in the same manner as herbs. Those that are thick and juicy, may be exposed to an artificial heat, gradually raised to 100 degrees of Fahrenheit.

613. Flowers are to be collected in clear, dry weather, just before, or immediately after, they have bloomed. They require to be dried in the shade, and in as short a time as possible, that they may retain their odor and color.

614. Seeds are gathered when they are fully ripe, separated from the chaff or dirt, and deposited in a clean, dry place, secure from worms and insects.

615. Families in the country may sometimes find it convenient to prepare their own medicines, and with this view they should be supplied with a *mortar*, *break*, and *pestle*, to reduce the different articles to powder. My friend Dr. A. C. Logan, has adopted a simple and well contrived plan, for this purpose. He has a mortar weighing about thirty pounds, covered with a hood, which is fastened below the rim of the mortar with two or three moveable wooden pins. He then employs an iron break, weighing five pounds, and inserted into a handle three feet and a half long, which enables him to reduce the toughest roots and barks to a tolerably fine powder, in a very short time. The break is worked up and down through a hole in the centre of the hood. Its face is rounding, three inches and a half in diameter, and cut into teeth with a file from the centre to the circumference, in the form of a star. The process of pulverizing is completed by an iron pestle, weighing nine pounds, which is similar to the break, excepting that the face is smooth.

616. A newly invented coffee or spice mill, has lately come into use in New England, by which barks, roots, and especially gum myrrh, are reduced to powder with comparatively little trouble. I am not aware that there is any thing peculiar in the construction of the mill, except perhaps that it is a little stronger than those in common use, and is designed to be nailed to the edge of a heavy table, or counter.

EMETICS.

617. Emetics are substances which are employed to evacuate the stomach by vomiting. They produce this effect independently of any nauseous taste or smell. Vomiting is also excited by riding, swinging, the motions of a ship at sea, a disagreeable flavor, the sight of a disgusting object,or some sudden or unexpected news.

618. Emetics appear to act through the agency of the brain and nerves. For example, if lobelia be administered by injection, it will occasion vomiting as effectually as though it had been introduced into the stomach. Here a local impression is made on the nerves of the intestines, which is communicated to the brain, and the stomach is excited to discharge its contents. If the brain is stupified with narcotics, however, vomiting will be produced with difficulty, for it is incapable of receiving the impressions which would otherwise be transmitted to it by the nerves. For the same reason, it is sometimes extremely difficult to excite vomiting in the delirium of typhus fever, the brain being unable, from the morbid excitement under which it labors, to perform its functions in a natural or healthy manner.

619. The importance of emetics in the treatment of disease, will be readily acknowledged by those who take into consideration the intimate sympathy existing between the stomach and other organs and parts of the body. Dr. Good very justly observes, "As the stomach is the common centre of sympathy, it is not to be wondered at that nausea, or sickness, should be a symptom common to a variety of diseases, seated in organs more or less remote from itself; hence we find it occurring in colic, cholera, stone, the accession of fevers, repelled gout, and various complaints of the head."

620. A severe local affection will very soon disorder the stomach, and produce a new train of symptoms, unless prevented by the use of appropriate remedies. I was once asked by a medical man, in way of derision, whether I would give an emetic in case of a broken leg. I replied, that if the local irritation, occasioned by the fracture, was likely to affect the whole system, and thereby derange the stomach, I would certainly administer an emetic, for I knew of no better means of preventing the development of constitutional symptoms, which might ensue, and perhaps prove fatal to the patient.

621. The sagacious Dr. Cullen, for he was sagacious in many respects, was led to perceive the important influence of the

stomach in certain diseases, but it does not appear that he adopted any adequate or specific means to change its morbid condition. For example, he says, "the paroxysms of gout are commonly preceded by an affection of the stomach," but in the treatment of gout, he produced a still greater derangement of the organ, by making it the receptacle of poisonous drugs. Consequently, he retarded rather than accelerated the progress of cure. Hence his well known exclamation, "I am much disposed to believe the impossibility of a cure of the gout by medicines; and more certainly still incline to think that, whatever may be the possible power of medicines, yet no medicine for curing the gout has yet been discovered."

622. The stomach possesses to a great degree the control of every other organ in the body, and it is only through its influence, that the system is enabled to overcome disease. In wounds, for example, the healing process is very much retarded, if the stomach is in a diseased or morbid state; but on the other hand, if the organ is healthy and vigorous, a wound will heal with surprising rapidity, and almost without any care or attention on the part of the patient. In my visits to the public hospitals, I have seen indolent ulcers of one or two years' standing, which I was confident might have been cured in a few weeks, by adopting the proper means to cleanse and invigorate the stomach, and improve the general health.

623. The stomach is frequently the seat of disease, when no suspicion of the fact is entertained by the medical attendant. Professor Revere of Philadelphia, stated to his class, that he was called to a blacksmith, who was pronounced by another physician, previously in attendance, to have inflammation of the brain; but on an examination of the symptoms, Professor R. came to the conclusion, that the difficulty arose from some indigestible substance in the stomach, and prescribed an emetic, which afforded immediate and entire relief. Had the lancet been employed, continued the professor, under the impression that the brain was the seat of the malady, the constitutional energies of the patient would have been impaired, and weeks might have elapsed before his recovery.

624. A familiar story is related of a young man who was attacked with a violent fever, and was bled, blistered, and dosed with calomel for nearly a week, without any benefit, when he accidentally vomited, and discharged a quantity of fat pork, which he recollected to have eaten about the time his sickness commenced. He began to recover as soon as his stomach was thus unloaded of its vitiated or indigestible contents.

625. "The dissection of dead bodies," says Cullen, "shows that the stomach has been very often affected with inflammation,

when the characteristic symptoms of it had not appeared; and therefore *we cannot lay down any general rule for the cure of this disease!*"

626. Beaumont had occasion to observe that the stomach of St. Martin was at one time unusually morbid, without any essential aberration of its function being manifested. Its lining membrane was inflamed, and covered with livid spots, from which small drops of blood exuded, and yet St. Martin had a good appetite, a uniform and regular pulse, and complained of no symptom indicating any general derangement of the system. At other times, however, symptoms in a remote part were clearly referable to the stomach; and Beaumont remarks, that "the violent spasms and contortions affecting different parts of the body, which occasionally supervened on the introduction of crude or indigestible food into the stomach, were pretty clear indications of the powerful sympathy which existed between that and other organs."*

627. Dr. Eberle, in his Therapeutics, remarks, "The effects of impression on the stomach, are often manifested in other parts of the body in an exceedingly violent and sudden manner. Debility, syncope, and even death, are sometimes suddenly produced by the action of indigestible food on a weak stomach. Seeing, therefore, such violent affections excited by articles that suddenly resist or prostrate the energies of the stomach, there is reason to believe, on the other hand, that whatever has a tendency to give vigor to this organ, will communicate a corresponding vigor to the general system."

628. The length of time that indigestible substances remain in the stomach, is truly astonishing. Dr. Good quotes from an old author as saying, that the stones or kernels of fruits, as cherry stones, have been found to remain in the organ for even three years, undergoing little or no change.† Professor Elliotson has seen a coagulum of milk, like birdlime, which had remained a week in the stomach, producing great uneasiness. He has also seen a piece of salmon vomited by an infant, a month after it had been swallowed. Dr. Barlow has recorded an instance in which sulphate of iron pills were discharged per anum, a year after they had been taken. A case is related of a boy who swallowed thirty grapes without chewing them, and after frequent vomiting, and severe suffering for three months, he was cured by an active purgative, and ten of the grapes came away whole, even then."†

629. I met with a case in my own practice, similar to those above related. Mr. Bradbury, a printer, applied to me for ad-

* Beaumont's Experiments. Plattsburgh, 1833.

† Study of Medicine, 6th American edition, vol. i. pp. 80, 100.

vice, after having been unwell for ten days. Suspecting the difficulty to be in the stomach, I recommended an emetic of lobelia, which caused a number of raisin skins to be ejected. Mr. B. assured me that the raisins had been eaten eleven days previous to that time, and he was satisfied that they had been the exclusive cause of his sickness.

630. Mr. Bell, in his Anatomy and Physiology, remarks, "We shall frequently find food of difficult digestion lying in the stomach, and oppressing it for days, while food more recently received, may have undergone the natural changes, and have, at all events, passed through the pylorus into the duodenum." No one will question the truth of this assertion, who makes himself acquainted with the anatomy of the stomach. The sac or left extremity of the organ, is lower in the cavity of the abdomen than the pylorus, (see illustration on page 18) and consequently, if the stomach is in a feeble or relaxed condition, any morbid matter, or indigestible food which it may contain, will accumulate in the sac, and cannot be dislodged without the agency of an emetic. Hence it is, that emetics are of so much importance in the treatment of disease, and I do not hesitate to say, they will afford speedy relief in many instances, where a patient might otherwise continue ill for weeks, or even months.

631. Emetics are particularly useful in fevers, because, whatever be their type or character, they are invariably accompanied with a deranged or morbid condition of the stomach. Indeed, the various symptoms constituting fever, seem to radiate from this organ as from a focus, and it is important therefore to remove its vitiated contents, with as little delay as possible. The emetic may also be repeated at proper intervals, till the fever is subdued. It will not produce debility, as is often supposed, but on the contrary, impart strength and vigor. Dr. Good has very truly remarked, that vomiting rouses rather than depresses the vital energies, and he further observes that "there are few persons so debilitated as not to bear vomiting."*

632. Emetics are not only useful in emptying the stomach of irritating matter, but they also have a beneficial influence upon the general system. They give an impetus to the circulation, cause the blood to move freely in the different vessels, and counteract all local congestions or determinations. They promote a healthy action in the various internal organs, and exercise a particularly beneficial influence over the liver. Indeed, there is no part ororgan of the body, to which they do not communicate a salutary impression.

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* Study of Medicine, 6th American edition, vol. i. p. 95.

633. Emetics favor absorption, and are therefore useful in dropsies. On the same principle they tend to the dispersion of tumors and swellings; and even tubercles in the lungs are no doubt carried off by the process of absorption, which is rendered more active by the operation of vomiting.

634. An emetic generally affords relief in mental derangement, unless the case is very obstinate. A quantity of highly offensive matter is usually discharged from the stomach in such case.

635. The administration of an emetic at the commencement of the cold stage of ague and fever, giving cayenne freely at the same time, and employing the vapor bath, will generally shorten the paroxysm, and greatly diminish its violence.

636. Emetics are invaluable in croup, and should never be dispensed with. Administered early in the disease, a single emetic will break it up; and if it has continued for some time, one or two repetitions of it, conjoined with the vapor bath, and the other requisites of a course of medicine, will scarcely fail to effect a permanent cure.

637. In severe injuries, an emetic should be given, especially if the patient has just been eating a full meal; for if the food remains undigested in the stomach, it will affect the whole system, and a cure is not only thereby retarded, but a violent fever or inflammation may ensue.

638. The passage of gall stones, either through the biliary ducts, or ureters, is greatly facilitated by emetics.

639. The intimate sympathy existing between the stomach and surface of the body, render emetics highly useful in all cutaneous diseases. In measles, or small pox, for example, if the eruption is slow in appearing, an emetic will develope it in a speedy and effectual manner.

640. In hemorrhage from the lungs, emetics are decidedly useful, for they not only recal the blood from the lungs to the stomach, but determine it to the skin, and other parts of the body. Thus an equilibrium is established in the circulation, and the flow of blood is arrested. Emetics are equally beneficial in hemorrhages from other organs, and in conjunction with stimulants and the vapor bath, may be employed with perfect safety.

641. Asthma and sick headach, are generally associated with a disordered state of the stomach, and vomiting therefore is one of the best of remedies.

642. In dyspepsia, jaundice, and the usual routine of chronic complaints, it is generally necessary to evacuate the stomach with an emetic, before a very strong impression can be made upon the disease. It is only through the medium of this organ that we can

hope to effect a cure, and but little can be accomplished while we suffer it to remain in a morbid condition.

643. In pleurisy, lung fever, or any other internal inflammation, emetics are particularly useful, because, by their tendency to equalize the circulation, they counteract the determination of blood to the diseased organs.

644. Emetic substances in nauseating doses, are useful in deep seated pains, strictures, inflammations, and hemorrhages, and often afford signal relief.

645. An emetic, by its operation, increases the action of the diaphragm, and thereby becomes an expectorant. Hence it is serviceable in diseases of the lungs. It causes the vitiated matters which have accumulated in the air passages, to be expelled, and not unfrequently, produces a free expectoration, where the cough was previously harsh and dry.

646. In apoplexy, and other determinations of blood to the head, an emetic should be promptly administered, particularly if the patient has been indulging in a hearty meal. It was supposed at one time, that an emetic would increase the determination to the head, but this opinion is now generally abandoned. Dr. Dunglison, in his remarks on the use of emetics in apoplexy, says, "In the opinion of many, no mischief arises, but rather advantage, in those very cases in which the doubt has been raised by others."*

647. In the preceding remarks on the value of emetics, the reader need scarcely be told, that they refer principally to the *lobelia inflata;* for that is the only emetic among those of an active character, which can be employed with safety, or advantage in every form of disease. The emetic poisons in use by the old school physicians, as *tartrate of antimony*, and *sulphate of zinc*, almost invariably do more harm than good, and not unfrequently kill the unfortunate patient to whom they are administered.

LOBELIA.

Lobelia Inflata—The Leaves and Seeds.

448. This invaluable herb is variously called emetic weed, puke weed, colic weed, eye bright, bladdered lobelia, wild tobacco, and Indian tobacco. The genus or family of plants which Father Plumier denominated lobelia, in the latter part of the

* Dunglison's Therapeutics, p. 213.

Lobelia [illegible] Inflata

[illegible] Sharp Michelin & [illegible]

sixteenth century, in honor of M. de Lobel, a distinguished German botanist, was subsequently introduced by Linnæus into his Species Plantarum, under the title of Scævola, while the original name was conferred by this botanist on the family of plants now universally comprehended under the title *lobelia*. This change was made to prevent confusion, for it was found that the latter genus was much better known by the name in question, than the one to which it was originally applied.

648. There are, altogether, about one hundred species of lobelia, peculiar to different countries. Twelve or fourteen of these grow in the United States, the most common of which, besides the *inflata*, are the *claytoniana*, *syphilitica*, and *cardinalis*. The latter is remarkable for the profusion of its beautiful red flowers. The *inflata*, however, is the only species employed in the American practice, and is the only one, so far as my knowledge extends, which possesses medicinal properties of any particular value.

649. The lobelia inflata has a whitish, fibrous root, and an upright, hairy, angular stem, which is much branched about midway, and from ten inches to two feet in height. The branches are considerably shorter than the stem. The leaves are tapering, hairy above and below, bordered with small, irregular teeth, and generally without footstalks. Some of them are broad, and others long and narrow. The flowers are palish blue, thinly scattered along the branches, and upper part of the stem, and continue to bloom from July till late in autumn. I saw them two years ago, near Philadelphia, in the first week of November, when the weather was cold and wintry. The blossoms are succeeded by inflated pods or seed vessels, somewhat in the shape of an egg, which contain a multitude of brownish, and very minute seeds.

650. The plant, when broken, exudes a milky juice.

651. Many botanists describe lobelia inflata as an *annual*, but it is naturally a *biennial*. The young plant may be seen in the latter part of summer, and during the autumn, with its leaves flat upon the ground, spreading out in the form of a star; and it remains in this situation through the winter, resisting the effects of frost and snow, and arrives at maturity the ensuing year. By cultivation, however, lobelia becomes an annual; that is, if the seeds be deposited in the ground early in the spring, and the season is favorable, they will sprout and shoot up stems; and by the expiration of the autumn, the plant will have passed through the various stages of its growth.

652. Lobelia is common in almost every part of the United States, growing in pastures, neglected fields, thickets, woods, on the banks of streams, by the roadsides, and indeed in almost every

possible locality. It often springs up abundantly in stubble fields, the year subsequent to the removal of the grain. Cultivated in gardens, it is more vigorous in its growth than in the wild state, and often attains the height of three feet. It does not grow in England, nor is it probable that the climate of that country would admit of its cultivation, excepting in gardens, or hot houses. Europe, according to botanical works, affords only three species of lobelia, neither of which is the *inflata*.

653. *Was it used by the Indians?* There is a general impression, that lobelia inflata has been long and familiarly known to the North American Indians, as a medicine, but this is true only in a very partial degree. There is abundant traditionary evidence, that it was used by the Penobscot Indians, long before the time of Dr. Samuel Thomson, its reputed discoverer, but with the exception of that tribe, I have not been able to discover, by any researches I have made, that the American aborigines had any knowledge of its properties, or virtues. The well known Bartram, who traversed the Floridas, and the western parts of Carolina and Georgia, in 1773–4, for the discovery of rare and useful productions of nature, describes a great number of plants, and communicates much valuable information with regard to their use by the Indians, but he makes no mention of their having employed lobelia inflata.

654. The enterprising Carver, who set out from Boston on a tour through the interior parts of this country, in 1776, travelling five thousand miles, and visiting the Indian tribes in the neighborhood of the lakes, gives an account of the modes adopted by the aborigines in the cure of diseases, and describes a number of plants which they employed in their practice, but does not make any mention of lobelia.

655. Lewis and Clark, who commenced their expedition to the sources of the Mississippi in 1804, had every opportunity of becoming acquainted with the medical practice of the Indians, but it does not appear that the latter had any knowledge of lobelia, though they were well acquainted with the use of the vapor bath.

656. Major Long, also, who crossed the Rocky Mountains as late as 1819, particularizes many of the diseases which prevailed among the Indians in that region of country, and gives an interesting account of their medical practice; but he says they were ignorant of the use of emetics, and observes, that when they wished to produce vomiting, they would tickle the throat with a feather.

657. In conversation with Professor Nuttall, who is famed both as a botanist and a traveller, I enquired whether, in his jour-

ney across the Rocky Mountains, he saw any evidences that the Indians employed lobelia inflata as an emetic. He promptly replied in the negative, as I naturally anticipated. Indeed, I may here remark, that the Indians have but a very slender knowledge of the healing art. We are informed by the Rev. Mr. Parker, a recent traveller among them, that they do not profess to be acquainted with remedies, beyond a few simple specifics. "They have what are called *medicine men*, who are furnished with a bag, in which is deposited various relics, not to be administered to their patients, but to operate as a charm. The patient is stretched upon the ground; a number of persons collect around him in a circle, and sing what is termed the *medicine song*. The medicine man enters the circle, and commences his magical incantations; uses many gestures and inarticulate sounds; pats or kneads the patient with his hands; blows into his ears, and practises other like ceremonies. When it is supposed that the bag has insensibly imparted its virtues, the medicine man presents some trifling article, as a small bone, stick, or pebble, and says he has taken it from the body of the patient, and that it was the cause of the disease; or he gives a heavy puff, and says the disease has come out of the patient, and gone upward, and then asks him if he does not feel better."*

658. As a further proof that the Indians were unacquainted with the properties of lobelia, previous to the time of Thomson, with the exception of the Penobscot tribe, which I have already mentioned, the reader's attention is solicited to a work by Samuel Stearns, M. D., entitled the American Herbal, which was issued originally in 1772, and published in an improved form in 1801. The author was a native of Massachusetts, where he was instructed in the medical art. He professes to have given a full account of the virtues of the mineral, vegetable, and animal productions of North and South America, *as far as they were then known*, including a knowledge of a large number of new medical discoveries and improvements, compiled from the best authors. He also states that in order to render his work as complete as possible, he travelled in nine of the American governments, and in England, Ireland, Scotland, and France, including a distance, by land, in this country, of eleven thousand miles. He passed a considerable portion of his time among the aborigines, and appears to have been well acquainted with their remedies. He mentions five species of lobelia, four of which he has named. These are the cardinalis, dortmanna, kalmii, and syphilitica. He describes the root of the latter as purgative, says it was used by the Indians,

* Exploring Tour beyond the Rocky Mountains.

and gives particular directions for its employment. He does not name the lobelia inflata, however, and hence we are led to infer, that it was not generally known by the Indians at the time he wrote, or he would, undoubtedly, have given it a place in his work.

659. *The Discovery of Lobelia.* Dr. Samuel Thomson claims to have discovered the medical properties of lobelia, but independently of the Penobscot Indians, there is conclusive testimony that it was used by many people in New England, long before his time. They called it colic weed, and Indian tobacco, and administered it in the form of tea, to produce vomiting. They did not consider it dangerous, and employed it without any fear, or precaution. It was their unfailing remedy in colic, and hence the name of colic weed.

660. With regard to the early history of lobelia, as a medicine, I am indebted for many interesting particulars to Mrs. Stone, of Brunswick, Me. She informs me that her townsman, Mr. Philip Owen, now eighty years old, relates, that when a boy, he was sent into the field by his mother, to collect some for a child, sick with the quinsy, and that the herb, administered in the usual manner, afforded speedy and entire relief.

661. Mr. William Coburn, the father of Mrs. Stone, who has also reached his eightieth year, says that lobelia has been used as a medicine, in the State of Maine, both by the people, and the Penobscot Indians, ever since he can remember, which is a period of not less than seventy years. Mr. Coburn is well known to many of the citizens of Maine, as having been an interpreter between the French and Indians, during the old French war.

662. According to Mrs. Stone, also, we have the testimony of Dr. John A. Hyde of Freeport, Me., a very old physician, that the people in that vicinity were in the habit of using lobelia under the name of colic weed, when he first settled in the town, which was about fifty years ago. He says they employed it in various complaints, but particularly in colic, and considered it perfectly safe and harmless.

663. I have before me a letter from Dr. E. Harlow of New Lebanon, Ct., to a gentleman in Boston, dated May 15th, 1835, in which he says, "I commenced the vegetable or botanic practice of medicine about 1796, under the instruction of Dr. Root, of Canaan, Ct., who was esteemed as an able botanic physician. He made use of lobelia inflata, under the name of Indian tobacco, and taught me the use of it; and from that period to the present, I have continued to employ it in my practice. I may also state

that Dr. Forbes of Lebanon, used it when I was a boy, and from that circumstance it received the name of Forbes's weed."

664. The same letter states that Doctress Charity Shaw Long of Albany, N. Y., secured a patent for the use of lobelia inflata, in 1812, which was one year in advance of Dr. Thomson's patent.

665. Were it necessary, I might adduce a large amount of testimony, to prove that Dr. Thomson was not the original discoverer of lobelia, but he has, nevertheless, been chiefly instrumental in introducing it into general use, and is therefore entitled to the respect and gratitude of his fellow men.

666. *Medical Authorities.* I have availed myself of the subjoined authorities, because a certain class of medical men have been laboring, very industriously, for the last fifteen or twenty years, to convince the people that lobelia is a poison. Nothing has been left undone, to prejudice the public mind against the use of the plant, and it has only won its way to popular favor, through its incomparable virtues as a medicine. Dr. Thatcher, Dr. Coxe, and other writers, have said, that "even cattle and horses have been supposed to be killed by eating it accidentally," and yet they inform us that it has been long used by the North American Indians, as though the red men of the forest had no more sagacity, than to employ an herb that was sufficiently poisonous to kill a *beast*. Medical men, however, are becoming ashamed of this stereotyped falsehood, and in the last edition of the United States Dispensatory, it has been prudently omitted.

667. Dr. Cutler, who wrote on the subject of lobelia, in 1810, indulges in the following remarks. "It has been my misfortune," says he, "to be an asthmatic for about ten years. I have made trial of a great variety of the usual remedies, with very little benefit. The last summer I had the severest attack I ever experienced. It commenced early in August, and continued eight weeks. Dr. Drury of Marblehead, also an asthmatic, made use of the tincture by the advice of a friend, in a severe paroxysm, early in the spring. It gave him immediate relief, and he has been entirely free from the complaint since that time. In a paroxysm which, perhaps, was as severe as any I ever experienced, and the difficulty of breathing extreme, I took a table-spoonful of the tincture made of the fresh plant. In three or four minutes, my breathing was as free as it ever was, but I felt no nausea at the stomach. In ten minutes, I took another spoonful, which occasioned sickness. After ten minutes, I took the third, which produced sensible effects upon the coats of the stomach, and a very little vomiting, with a kind of prickly sensation through the whole system,

even to the extremities of the fingers and toes. The urinary passage was perceptibly affected, by producing a smarting sensation in passing urine; but all these symptoms very soon subsided, and a vigor seemed to be restored to the constitution, which I had not experienced for years. Besides the violent attacks, I had scarcely passed a night without more or less of it, and often so as not to be able to lie in bed. Since that time I have enjoyed as good health as, perhaps, before the first attack."*

668. Dr. Good, in his Study of Medicine, remarks, "Dr. Andrews prescribed the tincture of lobelia inflata in hooping cough, with striking success. He says there is no other medicine that so effectually frees the air passages of the lungs of their viscid secretions."

669. Dr. Eberle, in his Materia Medica, observes, "I have had several very striking examples of the good effects of lobelia, in asthma. Its operation is, indeed, often surprisingly prompt and effectual. I have known the most frightful paroxysms completely allayed in less than fifteen minutes. Even where the disease depended on organic affection of the heart, it has speedily, as a general thing, mitigated the distressing difficulty of breathing. As an emetic, I have employed it in several cases of croup, with very great benefit."

670. In his Practice of Medicine, the same writer says, "The lobelia inflata has proved an excellent remedy in my hands in hooping cough. It not only mitigates the violence of the cough, but it has appeared to me unequivocally to shorten the course of the disease, in several cases."

671. Professor Tully of Yale College, who has employed lobelia inflata in his practice, for twenty-seven years, remarks, "As an emetic, I am satisfied that it is as kind and as destitute of all hazard as ipecacuanha, though perhaps it may be somewhat more efficient. I have occasionally known it to produce powerful nausea without vomiting, and with considerable prostration; but by no means so often as I have known ipecacuanha do this. I have a considerable number of professional friends who use it more than any other emetic, and on the whole, consider it one of the very best agents of this class in the whole materia medica. * * * I am confident, the old women's stories in the books to the contrary notwithstanding, that lobelia is a valuable, a safe, and a sufficiently gentle article of medicine; and I think the time will come when it will be much better appreciated. Little, however, of its value can be specified within the compass of a single sheet of paper."

672. Dr. Waterhouse, for many years a professor in the

* Thatcher's Dispensatory, 3d edition, p. 279. Boston, 1817.

medical department of Harvard University, observes, "I have had ample proof of the efficacy and safety of lobelia in a number of cases, and have reason to value it as equal to any article in our materia medica. * * * I not only give it to my patients, but take it myself, whenever I have any occasion for an emetic."

673. Dr. Samuel Thomson says, "In the fall of 1807, I introduced lobelia, tinctured in spirit, as a remedy in asthma, and other complaints, and used it successfully in several cases of consumption. In 1808, I cured a woman in Newington, of the asthma, who had not been able to lie in bed for six months. * * * I can assure the public that it may be used without any apprehension of danger. I have given it to infants a day old. It tends to remove obstructions from every part of the system, and occasionally produces a prickly sensation, which is felt even in the fingers and toes. * * * It not only cleanses the stomach, but exercises a beneficial influence over every part of the body. It is very diffusible, however, and requires to be used with cayenne, or some other pure and permanent stimulant. The effects of lobelia may be compared to a fire made with shavings, which will soon go out, unless other fuel be added. Cayenne, therefore, may be said to keep alive the blaze which the lobelia has kindled."

674. Properties and Uses. Lobelia, when first taken into the mouth, has but little taste, but it very soon produces a pungent sensation, which is experienced for a considerable time. To some people it is very nauseous, while others would rather take it, than a draught of pennyroyal, or composition tea. It yields its properties readily to water, wine, vinegar, and alcohol. Administered according to the directions in this book, it is the most thorough evacuant of the stomach that has ever been discovered; and it possesses the rare advantage of not irritating or inflaming the organ, as is generally the case with tartar emetic, sulphate of zinc, and other poisons of a similar nature. Hence, it may be safely used in every form of disease. It is also destitute of cathartic properties, and does not weaken or exhaust the patient, by acting upon the bowels. This cannot be said of the emetics ordinarily employed by physicians, for even ipecacuanha, the most innocent of them, will sometimes occasion debility, or prostration, by its irritating or purgative effects upon the intestinal canal.

675. It is a favorite theory with many people, that all emetics are poisons, and hence, they rank lobelia as a poison. We find, however, that a draught of warm water, a disgusting smell, or the thought of some offensive object, will produce vomiting, but we do not see in either of these, the operation of a poison. If the

stomach is much disordered, a dose of bayberry, or composition tea, will cause vomiting, but after the stomach is cleansed, a pint of the tea would produce no such effect, nor even excite nausea.

676. With regard to lobelia, however, I am satisfied that it has no tendency to operate as an emetic, independent of a morbid or diseased condition of the stomach. This is Dr. Thomson's theory, and it is abundantly sustained by facts. He speaks in his Narrative, of a Mrs. Burleigh, a rheumatic patient, to whom he administered several courses of medicine, with the usual good effects, but in the last course, though he gave her three tea-spoonfuls of lobelia, it excited neither sickness, nor vomiting. She perspired freely, however, and was entirely cured of her malady.

677. The first case of the kind I ever met with, occurred in the daughter of Russell Jarvis, Esq. of Philadelphia, to whom lobelia was administered on two successive days. In the first instance, it operated efficiently as an emetic, but in the second, it produced no effect whatever, excepting a moderate perspiration. Since that time, I have seen a number of similar cases; and have known individuals to take lobelia, by way of experiment, soon after going through a course of medicine, without experiencing the slightest nausea.

678. The wife of Mr. Ira Cheney, residing in Cross street, Boston, resolved to take a portion of lobelia, while in health, to see what would be its effects. Her husband, accordingly, gave her a tea-spoonful of the strongest tincture, and in fifteen minutes, followed it with a tea-spoonful of the pulverized herb, in composition tea, together with two tea-spoonfuls of rheumatic drops. In another fifteen minutes, he administered an additional tea-spoonful of the herb, with a tea-spoonful of composition, and a tea-spoonful of cayenne. Notwithstanding these repeated doses, no effect was produced, and Mrs. Cheney, in the meantime, attended to her household affairs.

679. Dr. N. Smith of Hallowell, Me., informed me, that a Mr. Libby came to his infirmary, in a state of mental derangemant, from over-excitement of the mind, and took a course of medicine, which had a very favorable operation, the patient vomiting a large quantity of bilious, and highly offensive matter. In three days the course was repeated, with equally favorable results, and in three days more, though the patient's appetite was good, and he talked rationally, it was thought expedient to administer a third course, lest he should have a return of the disease. The third preparation was freely employed, as in the previous courses, but it produced no visible effect, excepting a copious perspira-

tion. Mr. Libby dressed himself, ate a hearty dinner, and returned home in the stage-coach.

680. Dr. Smith also informed me, that Miss Paul of Hallowell, anxious to satisfy some of her friends that lobelia was not a poison, took two ounces of the third preparation, while in health, and though she expected to vomit, the medicine did not even excite nausea. She had previously taken lobelia in sickness, and it never failed to operate as an emetic.

681. Dr. Locke of Chelsea, near Boston, who has been in the habit of using lobelia for nearly thirty years, assured me, not long since, that he could take the herb with impunity, even in teaspoonful doses, by previously employing it to cleanse or evacuate the stomach.

682. I know of no explanation of the phenomenon in question, excepting, perhaps, that the lobelia, by acting as a peculiar stimulus upon the nerves of the stomach, increases its sensibility, and renders it more susceptible of a morbid impression from any irritating or offending matter which it may contain. In those cases in which lobelia does not produce vomiting, it is probable that the stomach, besides being in a healthy state, is entirely free from any morbid accumulation within its cavity.

683. Frequent attempts have been made to analyze lobelia, but never with uniform, or satisfactory results. Dr. Hare of the Pennsylvania University, says it is composed of an oil, and an acrimonious alkali, and to the latter, he attributes what he terms its *poisonous effects*. Dr. Hare, however, should be sufficiently learned in his profession to know, that lobelia, as it is *compounded* in the great laboratory of nature, is very different from lobelia which has been made the subject of experiment in the laboratory of the chemist. The great principle should never be overlooked, that substances become harmless or destructive, according to their peculiar combinations. Table salt, for instance, which we eat daily upon our food, is composed of soda and chlorine, the latter of which is a deadly poison. The air we breathe, is composed of the same materials as *aqua fortis*, and yet in its particular combination, it is one of the grand supporters of life. The same remarks are equally applicable to lobelia; and though chemists may tell us that it contains a poisonous principle, we know, from experience and observation, that it is perfectly harmless in its operations upon the human system. Dr. William Hunter has beautifully said, that there is a wide difference between the chemistry of the stomach, and the chemistry of the laboratory, and Professor Chapman, improving upon this hint, remarks, that "the only mode of determining the virtues of a medicine, is at the bed-

side of the patient, where we can witness its effects on a diseased body." He also says—"Experience has fully demonstrated, that articles widely different in their general nature, as the most salutary food, and the rankest poisons, frequently exhibit nearly the same results, on analysis." Hence, we are not to reject the use of lobelia, merely because some idle chemist asserts that it contains a poison, which he might detect with equal certainty in the meat, or vegetables, upon which we daily subsist.

684. Writers on materia medica inculcate the doctrine, that lobelia is a cathartic, but this is one of their erroneous speculations. If they were in the habit of using the article, they would come to a different conclusion. Those who have employed it for a long series of years, uniformly bear testimony, that it is not cathartic in the least, and this is one of its peculiar recommendations. Professor Tully, from whom I have already quoted, says, he "has never been able to produce a *laxative*, or even an opening effect with it; but he has occasionally, though not often, known it to produce costiveness." The truth is, lobelia regulates the bowels, by the salutary impression which it makes upon the general system, and if purging follows its administration, in a few solitary instances, we are to regard it as an indirect result of the medicine.

685. It is amusing to observe with what pertinacity some of the medical profession pronounce lobelia to be a *narcotic*. Here again they have hazarded an opinion without any experimental knowledge. "Dr. Bigelow," remarks Professor Tully, "was the first person who ascribed narcotic powers to this agent, and this he did in 1817, but not from his own observation; and after he first pronounced it narcotic, subsequent writers very speedily converted 'something as black as a crow, into three black crows;' and Dr. Ansel U. Ives of New York, at last pronounced lobelia inflata to be a '*deadly narcotic*,' and that its action as an emetic, 'is secondary or symptomatic of the primary impression upon the brain, like that caused by tobacco, and other narcotic poisons.' "But all this," continues the professor, "is mere stuff, and closet speculation, and does not contain a single truth. There is no probability that Dr. Ives ever used the article in his life."

686. The quieting influence of lobelia on the nerves, when they are in a state of irritation, has no doubt led the medical faculty to suppose that it is a narcotic, for they have not yet learned to distinguish between *nervines* and *narcotics*, the former of which merely allay the excitement or irritability of the nerves, while the

latter destroy nervous sensibility, and give rise to stupor, and a heavy, death-like sleep.

687. I recollect a woman in Boston, who, from a disorder of her nervous system, was unable to obtain any rest for ten days, and upon lobelia and cayenne tea being administered in frequent doses, she sunk into a refreshing sleep, from which she did not awake for nearly twelve hours. Her skin, during this interval, continued moist, and of a natural temperature. Here, it may be said, that the lobelia acted as a narcotic, but it only had the effect to quiet the excitement of the nervous system, and afford to nature an opportunity of recruiting her exhausted energies.

688. In some instances, I have known lobelia to produce a directly opposite effect, and occasion watchfulness, the patient being unable, after a course of medicine, to close his eyes in sleep during the night. It is remarkable, however, that he does not usually complain of languor or fatigue in the morning, as he would naturally do, if the watchfulness proceeded from any other cause.

689. If poison has been taken into the stomach, lobelia is the most prompt and active emetic that can be employed. I have known dogs to be completely stupified with laudanum, and speedily recovered by the administration of lobelia, which has never failed to evacuate the stomach. Dr. J. T. Crossman of Philadelphia, a respectable and intelligent physician of the old school, told me he was called to a child, three years old, who had swallowed an ounce of laudanum, by mistake. He found it insensible, and breathing with great difficulty. He gave it large quantities of ipecacuanha, tartar emetic, and sulphate of zinc, but all to no purpose. He then thought of the tincture of lobelia, some of which he immediately procured at a drug store, and poured an ounce of it down the child's throat. In fifteen minutes vomiting ensued, and the laudanum was discharged. The child immediately recovered, and in a short time, was running about with its playmates.

690. I have found lobelia a very useful remedy in small doses, administering a quarter of a tea-spoonful of the powder, more or less, at a time. This may be given at night, on going to bed, in composition tea, or it may be taken through the day, provided the patient is not exposed to the open air. In cough, difficulty of breathing, fever, hoarseness, colic, croup, delirium tremens, hooping cough, strangury, pains, strictures, palpitation of the heart, and nervous affections, it is particularly useful. It promotes a gentle perspiration, and has a renovating influence upon the digestive organs. Taken at bed time, the patient generally

finds himself refreshed on the ensuing morning. Where the continued use of the medicine is required, the dose may be repeated every hour or two, according to circumstances. It need not be taken to the extent of producing nausea, unless particularly required. I know some practitioners who introduce a small portion of lobelia into nearly all their preparations, not even excepting the spiced bitters.

691. Lobelia possesses powerful antispasmodic properties, and as such, will be spoken of, hereafter, under the head of *third preparation.*

692. The infusion of lobelia is very useful in sore, or weak eyes, and hence the name of eye bright. Injected into the ear, also, in case of deafness from hardened wax, it will generally afford relief.

693. Where it is necessary to produce muscular relaxation, as in fractures, dislocations, and tedious or difficult labors, lobelia is highly beneficial. The powder, administered in lukewarm water, has a more relaxing influence, than when given in bayberry, or composition tea. In sore throat, attended with an inability to swallow, a tea-spoonful of lobelia, administered by way of injection, and repeated if necessary, will soon relax the constricted parts of the throat, and enable the patient to swallow without difficulty.

694. Lobelia is a valuable expectorant, and for that purpose may be employed in the form of *tincture*, *cough sirup*, or *cough balsam*, as will be directed under these heads, in a subsequent part of the work.

695. *Green lobelia* is a term applied, in common language, to the pulverized leaves of the herb, and *brown lobelia* to the pulverized seeds. A tea-spoonful of the former, is about equal in strength, to two-thirds of a tea-spoonful of the latter. The green lobelia is preferable in the treatment of children, and delicate females, and also in the administration of a light course of medicine.

696. A foolish opinion is entertained by some people, that in vomiting, occasioned by lobelia, the food is not ejected. This is an error which a slight attention to physiology would put at rest. The food during the digestive process, undergoes what Dr. Beaumont has termed a "churning motion," and is also acted upon by the gastric juice, (82, 85.) so that it is reduced from a pulpy, to a liquid mass, denominated *chyme*, in from thirty minutes to an hour. This is under ordinary circumstances, and if stimulating teas are administered, as is usually done previous to a course of medicine, the motions of the stomach become still

more active and vigorous, and the solid portions of food are no doubt reduced to chyme in even less than half an hour. When vomiting occurs, therefore, the food is unquestionably discharged, though it cannot be detected on account of its fluid character. The stomach, moreover, in the action of vomiting, contracts equally upon the entire mass of its contents, and forces them indiscriminately from its cavity, whether food be blended with them, or not. Lobelia is not endowed with an intelligent power, that it can search out the vitiated matters in the stomach, and cause them to be expelled, while the food is suffered to remain. But we are told, that even the gruel, or milk porridge, which is taken during the operation of a lobelia emetic, is not discharged. This is true, as a general thing, but it does not involve any mystery, for the porridge passes rapidly out of the stomach into the intestines, through the pyloric orifice. (67.) In tedious or protracted vomiting, however, the porridge is usually rejected, because there is an inverted action of the duodenum, which prevents its passage through the pylorus. In such cases, also, there is generally a discharge of bile, which is forced by the duodenum into the cavity of the stomach, in consequence of its inverted action.

697. When solid, or indigestible food is discharged in vomiting, which occasionally happens, it is to be attributed to the feeble state of the digestive organs, the stomach not being sufficiently active or vigorous, notwithstanding the use of stimulating teas, to resolve the food into chyme.

698. The rules for administering lobelia as an emetic, will be given in the directions for a course of medicine, to which the reader is referred.

699. *Collecting and Preserving Lobelia.* Where the herb is required for use, it should be collected in August, before the leaves begin to fade, and spread thinly in a chamber or loft to dry, previously separating the stems from the roots. The air should be admitted into the apartment in the day time, and excluded at night, provided the atmosphere is damp.

700. If it is desirable to obtain the seeds, the plant should not be collected until the leaves begin to assume a yellowish appearance, which will generally be in the latter part of August, or the first week in September. After the herb is dried, which is to be done according to the directions in the preceding paragraph, the seeds are to be shaken from the pods, and passed through a fine sieve, to free them from dirt. The leaves also, even at this period, possess more or less value, and may be employed as an

emetic, though they are by no means so active as when procured at an earlier period.

701. It should be remembered that both the pulverized leaves, and seeds of lobelia, lose a portion of their properties by exposure to the light. Hence, they should be preserved in boxes, drawers, or well stopped jars.

702. The root of lobelia is not used in medicine. It is pungent in the young plant, but loses its taste as the summer advances. I make this remark, because writers on materia medica, who compile books without any practical knowledge, assert that it is the most active portion of the plant. The lecturer on botany, in the Transylvania University, told his class that the root was the only part which should be employed in practice.

BLUE VERVAIN.

Verbena Hastata—The Herb.

703. The blue vervain is found by roadsides, and in dry, grassy fields. It has a woody, fibrous root, and an erect, square, branching, and somewhat hairy stem, rising three or four feet high. The leaves are narrow, rough, sharp at the point, and edged with acute teeth. The lower ones are generally lobed at the base. The flowers are blue, or purplish, and thickly crowded upon erect, slender spikes; they bloom from July to September, a few of them only expanding at a time.

704. The white or nettle-leaved vervain, (*verbena urticifolia*) is sometimes used indiscriminately with the blue; but with the exception of the root, which is bitter, it is not endowed with medicinal properties of any value.

705. Properties and Uses. The *blue vervain* is bitter, somewhat astringent, and very nauseous. One or two tea-cupfuls of the strong decoction will operate as an emetic, and is used for that purpose, by people in the country. It also produces perspiration. In severe colds, and the early stages of fever, where the stomach is much disordered, it may always be employed with advantage.

706. In some sections of the state of New York, where the ague and fever prevails, vervain is much employed as a remedy. The decoction is given as an emetic, just as the paroxysm is coming on, and in many instances, a single dose has effected a permanent cure.

707. After the stomach is thoroughly cleansed, it does not produce nausea. At all events, this has been my experience, in the few instances in which I have had occasion to employ the herb.

708. A strong tea of vervain, sweetened with molasses, and administered in the dose of a table-spoonful, every half hour, or hour, is an excellent remedy in cough.

BONESET.

Eupatorium Perfoliatum—The Leaves and Flowers.

709. This plant is common in almost every part of the United States, inhabiting meadows, and low, moist grounds. It is variously called thoroughwort, Indian sage, sweating plant, ague weed, crosswort, vegetable antimony, and joepye. It received the name of *boneset*, from the fact of its having been employed in a painful disease, called *breakbone fever*. The root, which is horizontal and somewhat fibrous, sends up a number of round, hairy stems, which are branched at the top, and from two to five feet high. The leaves are peculiar in their character, and serve to distinguish the plant, the lower ones being united at the base, and perforated by the stem, making, in fact, one entire leaf, which tapers in each direction to an acute point. They are wrinkled, and deep green upon the upper surface, wooly, and paler beneath, with roundish teeth along the margins. The leaves upon the upper portion of the stem and branches are seldom united. The plant remains in bloom from August to October. The flowers are numerous, of a dullish white color, crowded together, in spreading flattened clusters, at the tops of the stem and branches.

710. This plant should be collected when in bloom, carefully dried, and the leaves and flowers separated from the stalks.

711. Properties and Uses. Boneset has a disagreeable and very bitter taste, yielding its properties readily to water, and alcohol. The warm infusion, given in large doses, operates as an emetic, and as such, is in common use by the people of New England. Boiling, I will remark, appears to diminish its emetic properties.

712. The infusion, in small and frequently repeated doses, induces a free perspiration, and on this account, has acquired considerable reputation in the treatment of ague and fever, and affections of the skin.

713. The decoction of boneset, administered cold, is both laxative and tonic. A tea-cupful of the tea, sweetened with molasses, may be taken every hour, until the desired effect is produced. It does not appear to irritate the bowels, or occasion thin or watery stools, and may therefore, be regarded as a laxative, rather than a purgative.

714. In preparing the decoction, a half an ounce of the powdered leaves may be boiled in a pint of water. A table-spoonful of this tea, administered occasionally, is useful in coughs. It may be sweetened with molasses, as already mentioned.

715. A lady in Randolph, Mass., informed me that boneset was the only medicine she had used in her family for fifteen years, and she had never known it to fail, in a single instance, to effect a cure. She gave it as an emetic, to cleanse the stomach; as a tonic, to improve the digestive powers; and as a laxative, to keep the bowels open. She further stated, that during the fifteen years, she had never availed herself of the services of a physician, though members of her family were sometimes dangerously ill. Boneset was her unfailing panacea, and it had always proved triumphantly successful.

STIMULANTS.

716. Pure, healthy stimulants, are those substances which act in harmony with the laws of the human system, and, while they stimulate, do not injuriously affect the brain, or increase the frequency of the pulse, beyond its natural standard. Taken into the mouth, they have a pungent taste, and when swallowed, impart to the stomach a genial sensation of warmth, which is soon communicated to other parts of the system, and accompanied, under favorable circumstances, with a flow of perspiration.

717. Stimulants, such as I have described, determine the blood in its requisite proportions to every part of the body, or in other words, restore a balance to the circulation, and hence, they may be safely and efficiently employed in fever, inflammation, and every species of congestion. They excite a healthy action, without irritating the parts with which they come in contact, impairing the integrity of the nervous system, or producing any other derangement in the animal economy.

718. Food may be regarded as a stimulant, acting, as it does, upon the vital machinery, and keeping the wheels of life in motion, but when it fails to impress the stomach in a healthy manner, it is necessary to resort to the stimulus of medicine.

719. "Health," says Dr. Eberle, in his Therapeutics, "is very intimately connected with the regular performance of the perspiratory function. Whenever the transpiration by the skin is suddenly checked, more or less derangement of the system is invariably the consequence. That portion of the circulating fluid which nature designs to be cast off by the cutaneous emunctories (pores of the skin) is retained, and becomes a source of irritation to the heart and other organs. * * * The sudden suppression of the perspiratory discharge, disturbs the regular current of the circulation; the blood retreats to the vessels of the internal organs, giving rise to congestion, inflammation, and fever. * * * A hot and dry skin, is invariably attended with augmented distress, in whatever disease it may occur; and when this is the case, nothing affords so much relief to the patient as a free flow of perspiration."

720. From the above remarks, it will be inferred, that stimulants, of a proper kind, are not only useful, but indispensable, in the treatment of disease; and we are confirmed in the belief, when we take into consideration, that "*five* out of every eight pounds of substance taken into the system, pass out of it again by the skin, leaving only *three* to pass off by the bowels, the lungs, and the kidneys."* We readily perceive, therefore, that if the skin is inactive, or the circulation feeble, the blood will soon become charged with impurities, and unless appropriate stimulants are administered, to keep a determination to the surface of the body, so that the impurities may escape through their natural outlets, disease will be the sure and necessary consequence. If, also, the blood recedes from the surface, leaving the skin pale, cold, and contracted, and flows into the internal vessels, stimulants must be employed to determine it to the surface, or some serious, or perhaps fatal inflammation of an internal organ, may be the result.

721. In contending for the use of stimulants, however, we must be careful not to employ those of an acrid, narcotic, or poisonous nature, or our success in the treatment of disease, will be no better than that of the diplomatised physicians. Mustard, for example, is an acrid stimulant, and will blister the skin, if applied externally, or irritate or inflame the stomach, if taken internally. Opium is a well known narcotic stimulant, and not only stupifies the brain, but in doses sufficiently large, occasions convulsions, and finally death. Phosphorus, which is frequently employed by medical men, is a poisonous stimulant, and produces a variety of dangerous symptoms. Among the narcotic stimulants, also, alco-

* Combe's Physiology, p. 38. New York, 1838.

hol holds a conspicuous place, and in the form of wine, or brandy, is usually employed by the medical faculty, in an exhausted or sinking state of the system. Its effects in health, are, "giddiness, confusion of thought, delirium, and various mental affections, followed, ultimately, by vertigo, stupidity, headach, sickness, and vomiting." Dr. Christison relates the case of a young man in Paris, who died by drinking brandy immoderately for several days in succession, and on examination after death, his stomach was found to be in a state of mortification, and the whole of the small intestines were in the incipient stage of inflammation.

722. If such be the morbid changes which are induced by alcohol in healthy individuals, we cannot, with any degree of propriety, resort to it as a medicine, in sickness. It may rouse the energies of an exhausted frame for the moment, but it will soon be followed by drowsiness, stupor, and death.

723. During my visits to the Massachusetts Hospital, my attention was attracted to a case of typhus fever. The patient was delirious, with contracted pupils, wild expression of countenance, pulse 120, dry, and brownish tongue, and black incrustations on the teeth. Dr. Bigelow directed that he should have an ounce of wine every hour, provided it did not *increase his delirium*, or the *force and frequency of his pulse*. What better proof could we have, that Dr. Bigelow regarded wine as a precarious and highly dangerous stimulant, and yet it was the only remedy that he proposed for the relief of the patient. The next morning the unfortunate man was a corpse.

724. Dr. Hunter made an interesting experiment to show the ill effects of an alcoholic stimulant upon the human system. "He gave one of his children a full glass of sherry wine every day after dinner, for a week. The child was then about four years old, and had never been accustomed to wine. To another child of nearly the same age, and under similar circumstances, he gave a large orange, for the same space of time. At the end of the week, he found a material difference in the pulse, heat of the body, and state of the bowels of the two children. In the first, the pulse was quickened, the heat increased, and the bowels deranged; while the other had every appearance indicating high health. He then reversed the experiment—to the first mentioned child he gave the orange, and to the other the wine. The effects followed as before; a striking and demonstrative proof of the pernicious effects of vinous liquors on the functions of life, in a state of full health."

725. Tartar emetic may be ranked as one of the poisonous stimulants* of the faculty, and is employed by them to an alarming

* Called in medical language, a *diaphoretic*.

extent. To say nothing of other dangerous symptoms, it never fails to produce a morbid condition of the stomach, accompanied, not unfrequently, with irritation, or inflammation. Given in small doses, it relaxes the pores of the skin, and induces perspiration, but it does not tend, in the remotest degree, to establish a healthy action in the system. Besides, it cannot be depended upon as a means of producing perspiration. I recollect an elderly lady, to whom it was administered, in flaxseed tea, for three successive days, with a view of exciting perspiration, but her skin at the end of that time, was as dry as ever. Displeased with her medical attendant, she consulted me, and I prepared a tea-cupful of composition tea, into which I put half a tea-spoonful of cayenne, and the same quantity of green lobelia. This was administered at one dose, and in ten minutes, the patient was covered with perspiration. Meanwhile, the former physician, not having been informed that his services were no longer needed, came in by accident, and supposing me to be a member of the family, expressed his delight that the symptoms were so favorable, believing that the tartar emetic, and flaxseed tea, had wrought the wonderful change, but when he ascertained what medicine had been given, he said it could not fail to kill the patient, and left the house in the utmost ill-humor.

726. The well known Dr. Lambe has made some interesting remarks on the subject of pure, and impure stimulants. He is a dietetic reformer, and so rigid in his notions, that he discards even milk, as injuriously stimulant. Nevertheless, in speaking of "spices," he says, "however hot and fiery they are in the mouth, they do not appear to be deleterious. They do not derange the brain, nor stupify the nervous system; they do not even appear to heat the body, nor greatly to accelerate the pulse."

727. Dr. Lambe quotes the opinion of Mr. Bruce, the well known traveller, on the subject of stimulants, who expresses himself as follows: "I lay it down as a positive rule of health, that the warmest dishes the natives delight in, are the most wholesome strangers can use, in the putrid climates of Lower Arabia, Abyssinia, Senaar, and Egypt itself; and that spirits and all fermented liquors, should be regarded as poisons."* Mr. Bruce remarks in another paragraph, that ardent spirits occasion "immoderate heat of the skin, and violent pains of the head," and asks, "if like sensations were ever produced by black pepper, or any other pepper eaten to excess at every meal?"

* Effects of a Peculiar Regimen, pp. 263–4. London, 1815.

728. Stimulants of a healthy character, cause a determination to the surface of the body, and thereby diminish the pressure of blood to any internal organ which may be the seat of disease. Hence in pleurisy, lung fever, or inflammation of the stomach, or bowels, they are of great value. If the symptoms are severe, they should be conjoined with the vapor bath; or heated stones, wrapped in damp cloths, should be placed at the patient's feet, in bed, and as soon as he begins to perspire, he will experience relief. Dr. Eberle, speaking of inflammatory affections of the lungs, remarks, "When the skin is moist with perspiration, the breathing is generally more free, the pain and distressful feeling in the throat less severe, and expectoration easier."*

729. Clutterbuck, in his remarks on hemorrhage from the lungs, observes, "It is not an uncommon practice to expose the naked body of the patient to cold air; or to apply cold water, or even ice, to the surface of the chest. But the effect of this is, by contracting the external vessels, to throw the blood in greater quantity upon the lungs, so as to produce distention of the vessels there—a most likely cause of increasing the hemorrhage at the moment, and of aggravating the local inflammation afterward. It would be far more advisable to keep up an equable circulation by friction, external warmth, and even the use of *internal stimulants*—a practice which I have often found successful."†

730. In diarrhœa, and dysentery, stimulants are particularly indicated, and afford relief by counteracting the undue determination of blood to the bowels. In fever, inflammation, and congestion also, they are indispensable, because they tend to restore a balance to the circulation, which is the grand object to be accomplished, in the treatment of these affections.

CAYENNE.

Capsicum—The Pods or Seed-vessels.

731. Capsicum is the botanical name of a large genus or family of plants, which grow in various countries, as Africa, South America, and the East and West Indies. The pods or seed-vessels of any one or more of the species, reduced to a powder, is distinguished by the name of *cayenne*. The *capsicum baccatum* or *bird pepper*, common both to Africa, and the West Indies, furnishes the best cayenne with which the market is

* Eberle's Therapeutics, 4th edition, vol. ii. p. 197.

† Lectures on Blood-letting, *vide* Select Medical Library, May, 1839.

Capsicum Baccatum.

Sharp, Michelin & Co. 17 Tremo

supplied. It is a shrubby plant, with a greenish, woody, branching stem, narrow and pointed leaves, white blossoms, and small, erect seed-vessels, which are of a lightish red color, when fully ripe. The drawing opposite to this page, was taken from a shrub of the capsicum baccatum, which was cultivated near Boston. The seed was planted early in the spring, in common garden mould, and sprouted in May. The plant was found to droop in cold or damp weather, but in a hot sun, it would immediately regain its freshness, and vigor. By September, it was nearly three feet high; and before it was half grown, it put forth a number of small, white blossoms, which were succeeded by pods, similar in shape to those obtained from Africa, or the West Indies. They were tasteless in the green state, however, and as the plant was killed, in October, by accidental exposure to the frost, they had no opportunity to ripen.

732. The African and West India pepper pods, closely resemble each other in shape, and appearance, but the latter, so far as I have observed, are more acutely pointed than the former. The color of each varies, according to the season in which they are collected, but those of a reddish tint, are considered the best. When they are of a green, yellow, or whitish color, it is an evidence that they have withered upon the shrubs, or have been gathered at too early a period. Peppers readily imbibe moisture, and if long exposed in a damp place, will undergo a change of color from that circumstance.

733. The East India pepper is far inferior to that of Africa, or even of the West Indies. Indeed, the plant does not appear to flourish very well in that country. Dr. Roxburgh, in his Flora Indica, published in 1832, in Calcutta, mentions six species, all of which are shrubby, but they produce so badly after the first year, that they are seldom suffered to remain longer than one season. The most common species, is the *capsicum frutescens*, which produces curved and tapering pods, an inch and a half, or two inches long. When ripe, they are of a yellow, or bright orange color. They are more used by the Hindoos than any other species, particularly when dried, in which state they are found in every market. These peppers are sent to the United States from Bombay and Calcutta, in large quantities, and are known here as the Bombay or chilly peppers. They come to us closely packed in palm-leaf bags, and are sold at from three to six cents a pound. Consequently, they are frequently employed in adulterating good cayenne, and were it not for their unpleasant taste and smell, the fraud could not be easily detected. They are hot and fiery in the mouth, but do not possess the permanent and gently stimulating properties of African cayenne.

734. The West Indies furnish numerous species of the capsicum. Mr. Hughes, in his History of Barbadoes, published in London, in 1750, mentions thirteen, which he found in that island alone. Among these, were the negro, cherry, bonnet, olive, white, bird, and bell peppers. Many of the species enumerated by Mr. Hughes, are also found in other of the West India Islands.

735. Dr. Sloane, who made a voyage to Barbadoes, and Jamaica, in 1707, says, that if "the cherry pepper be swallowed whole, it will help digestion, corroborate the stomach, and expel wind. It is also steeped in vinegar," he adds, "or pounded and mixed with salt, for a similar purpose." The bonnet pepper is described by Dr. Sloane, as being used throughout the West Indies, both as food and medicine. Besides being eaten with salads, the Spaniards put it into their chocolate. It is useful, observes the same writer, "in colic, pains of the womb, obstructed menstruation, quinsy, and dropsical affections; and made into a plaster, with honey, is beneficial in sciatica."

736. I have no accurate knowledge of the different species of capsicum growing in Africa. Judging from the specimens of pepper which I have seen from that country, however, varying as they do in size, shape, and color, I should think they were somewhat numerous. The bird pepper is the most valuable, and generally commands a high price in the United States. It is worthy of remark, perhaps, that nine-tenths of the African cayenne, so called, which has been sold in this country, for the last twenty years, has been manufactured from the West India peppers, and these not unfrequently adulterated with the still inferior pepper from Bombay, and other ports in Hindostan. Our best supplies come from Madagascar, the east and west coasts of Africa, and Guiana, in South America. The nearer the equator, the better, it is said, is the pepper.

737. *Cayenne an old remedy.* Capsicum has been esteemed as a valuable remedy for several centuries. Parkinson, who published a work on plants, in 1640, just two centuries ago, quotes from Gregorius de Reggio, as recommending a mixture of flour and pepper, (meaning the capsicum) to be made into cakes or loaves, and baked as bread until dry and hard, when they are to be pulverized, sifted, and kept for use. This preparation, says the writer, will do to season meat, broth, or sauce; it will give relish to wine, and other drink, cure the colic, and expel wind from the stomach. Parkinson observes—"A scruple of said powder, taken in a little veal or chicken broth, doth wonderfully comfort a cold stomach, helping digestion, and provoking

an appetite to meat. * * * The powder, taken for three days together, in a decoction of pennyroyal, expelleth the dead-birth. * * * It helpeth an old inveterate cough, and being mixed with honey, and applied to the throat troubled with quinzy, it helpeth it in a short space; made up with a little pitch or turpentine, and laid upon any hard tumors or kernels, it will disperse them. * * * A decoction of the pods made with water, and the mouth gargled therewith, easeth the toothach, and preserveth the teeth from rottenness; the ashes of them rubbed on the teeth, will make them white. * * * The pods steeped for three days in aqua vitæ, (ardent spirit) and any part affected with the palsie bathed therewith, will receive a great deal of ease; steeped for a day in wine, and two spoonfuls thereof drunk every day fasting, will helpe an offensive breath, although it hath continued long. * * * The powder of the pods snuft up the nostrils, will correct any unpleasant smell in them, proceeding from corrupted phlegm."

738. Parkinson may be regarded as good authority, for he was a distinguished botanist, and was appointed as herbalist to the king. He has described a greater number of plants, perhaps, than any other writer in the English language. He was contemporary with Lobel, whose name is now used to distinguish an extensive genus of plants, among which, lobelia inflata stands conspicuous.

739. "Among the spices which the Indies produce," says Dr. Thunberg, the traveller, "none is more commonly used than cayenne pepper, with which almost every dish is seasoned. Rice, mixed with the powder of this spice, is frequently eaten without any other addition. To fish, flesh, and all kinds of sauces, this hot spice is always added; and in soup, called currie, cayenne pepper is the chief ingredient."*

740. The above soup, continues the writer, strengthens the tone of the stomach, and assists digestion.

741. Marsden, in his history of the Sumatrans, remarks, "Cayenne pepper is one of the ingredients of their dishes. These may be composed of various kinds of edibles, but generally of flesh or fowl, and prepared after the manner of our curry." He adds, "It is not a little remarkable, that the common pepper, the chief product and staple commodity of the country, is never mixed by the natives in their food. They esteem it heating to the blood, and ascribe a contrary effect to the cayenne; which I can say my own experience justifies."†

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* Travels in Europe, Africa, and Asia, performed between 1770–79, vol. ii. p. 269. London.

† Marsden's History of Sumatra, p. 56. London, 1783.

742. From the testimony of Marsden, therefore, we are led to infer, that cayenne is a purer and better stimulant than black pepper, and of this, no one will entertain a doubt, who has been in the habit of using the two articles.

743. The natives of tropical countries make free use of cayenne, and do not find it injurious. Dr. Sloane, already quoted, says the Indians and negroes of the West Indies "will scarcely abstain from it in hot diseases," which shows that they do not consider it injurious. Dr. Watkins, who has frequently visited the West Indies, informed me, that the negroes of these islands, steep the pods of capsicum in hot water, adding sugar, and the juice of a sour orange, and drink the tea freely when sick, or attacked with fever.

744. *Medical Authorities.* According to the doctrines of the medical faculty, the use of cayenne in fever, inflammation, or hemorrhage, is pernicious, if not fatal; and yet, if we consult their works, we shall find that they prescribe cayenne in those very complaints.

745. The United States Dispensatory says, "Cayenne is a powerful stimulant, producing when swallowed, a sense of heat in the stomach, and a general glow over the body, without *any narcotic effect.* * * * It is much employed as a condiment, and proves highly useful in correcting the flatulent tendency of certain vegetables, and bringing them within the digestive powers of the stomach. * * * As a medicine, it is useful in cases of enfeebled and languid stomach, and is occasionally prescribed in dyspepsia and atonic gout, particularly when attended with much flatulence, or occurring in persons of intemperate habits. It has also been given as a stimulant in palsy, and certain lethargic affections. * * * Its most important application, however, is to the treatment of malignant sore throat and *scarlet fever*, in which it is used both *internally* and as a gargle. *No other remedy has obtained equal credit in these complaints.* * * * Applied externally, cayenne is a powerful rubefacient, very useful in local rheumatism, and in low forms of disease, where a stimulant impression upon the surface is demanded. It has the advantage, under these circumstances, of acting speedily without endangering vesication," (blistering.)

746. Dr. Thatcher, in his remarks on the different species of capsicum, says, "There can be little doubt, that they furnish us with one of the purest and strongest stimulants that can be introduced into the stomach; while, at the same time, they have nothing of the narcotic effects of ardent spirits."*

* Thatcher's Dispensatory, 3d edition, pp. 168, 641.

747. Again, in some observations on the treatment pursued by Dr. Wright, in the yellow fever of the West Indies, he says, "Where the stomach was too irritable for calomel, he resorted to the use of cayenne, made into pills; and it has cured, even after the commencement of the black vomit." He further remarks, "this pepper has been given in the putrid sore throat, in the West Indies, with the most signal benefit."*

748. The editor of the Boston Medical and Surgical Journal,† in contrasting ardent spirit and cayenne as stimulants, remarks, "Ardent spirit first excites, then depresses the vital energy, and then causes the very difficulty it is intended to relieve; therefore it is less safe and useful than cayenne, because the latter is not followed, as a part of its operation, by exhaustion, or any kind of stupor. It may be repeated without any danger of producing torpor or insensibility."

749. "Cayenne," says Paris, in his Pharmacologia, "has lately been given with success in the advanced stages of acute rheumatism; and as a gargle in malignant sore throat, it furnishes a valuable remedy." The same writer remarks, that the surgeons of the French army, have been in the habit of administering cayenne to the soldiers, who were exhausted by fatigue.

750. Dr. Ware of Harvard University, in a lecture on scarlet fever, asserted, that "a gargle of cayenne, used at the commencement of the disease, would arrest the affection of the throat."

751. We have the testimony of medical writers, that cayenne does not occasion thirst, or produce that feverish condition of the system, which is sure to follow the use of impure, or narcotic stimulants. Dr. Doane, the American editor of Good's Study of Medicine, mentions the following example: "A case occurred," he remarks, "within the observation of Drs. Hosack and Francis, of a gentleman then aged about thirty-five, who had no recollection of having ever experienced the sensation of thirst. He had long enjoyed good health, and was very muscular; even when using excessive quantities of stimulating condiments, as *cayenne pepper*, he had no desire for fluids."‡

752. It is probable that the use of the cayenne, in the above case, obviated any tendency to thirst; at all events, I have usually observed, that those who make free use of the article, as a condiment, do not evince any morbid craving for drink. In fevers, also, accompanied with burning thirst, I have never found a more

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* Thatcher's Dispensatory, 3d edition, pp. 168, 641.

† Vol. ix. p. 346.

‡ Study of Medicine, 6th American edition, vol. i. p. 78.

speedy or effectual remedy, than cayenne tea. The acrid, narcotic, or poisonous stimulants, however, would produce an opposite effect, and therefore cannot be employed in medical practice, without injury to the patient.

753. Cayenne is employed by the old school physicians, even in bleeding from the lungs. "According to Dr. Miner's experience," says Dr. Eberle, "powdered cayenne, given in doses of three to five grains every ten minutes, is a most efficient remedy in hemorrhage from the lungs. I have had occasion to prescribe this article in one instance lately, and the result has given a very favorable impression of its powers in this respect."*

754. Professor Channing of Harvard University, recommends the use of cayenne in flooding, after delivery. "In critical cases," said he to his class, "a very good remedy will be found in cayenne. It renders the pulse more regular than brandy, and acts kindly upon the general system. Brandy raises the pulse, and causes it to flutter, but it does not continue uniform."

755. "A few bird peppers swallowed whole," says Dr. Titford, in his Hortus Botanicus Americanus, page 46, "will relieve the heart-burn, and prevent dyspepsia."

756. Dr. Fuller, in his *prize essay* on the treatment of scarlet fever, says, "Powdered cayenne, made into pills with crumbs of bread, and given three or four at once, four times a day, is a most valuable stimulant in the last stage of this disease, and I believe it to be an article of great utility in all cases of debility, from whatever cause it may originate." Again, he says, "The tincture of cayenne, saturated with common salt, forms a most excellent gargle after the process of sloughing has taken place; it separates the dead from the living parts, and communicates a healthy stimulus to the mouth, and the glands of the throat."†

757. The same writer informs us, that the late Dr. Perkins, put his whole dependence upon the internal and external use of cayenne, salt, and vinegar, in the treatment of scarlet fever. "In an epidemic malignant scarlatina," says he, "which prevailed in Connecticut, forty years ago, the practitioners of those days employed the then popular remedies of bark and wine, and the result of their practice was, that *four out of five died of the disease.* When the epidemic was at its height, Dr. Perkins visited that region, and prescribed his favorite salt, pepper, and vinegar, with an effect to cure four out of five, and he often affirmed, that not one individual died who commenced his treatment at the beginning of the disease."†

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* Eberle's Practice, 4th edition, vol. i. p. 569.

† Boston Medical and Surgical Journal for 1838.

758. Cayenne was also used by Dr. Stephens, with marked success, in a very fatal epidemic scarlatina, which prevailed in the West Indies, in 1787. "He took two table-spoonfuls of small red pepper, or three tea-spoonfuls of common cayenne, and two tea-spoonfuls of fine salt; mixed them together, and poured upon them half a pint of boiling water; this was strained, and half a pint of good vinegar added. Of this liquor, when cold, a table-spoonful was given to an adult every half hour, and the throat frequently gargled with it. Dr. Stephens asserts, that he employed this remedy in about four hundred cases, and with surprising success. The ulcers in the back part of the mouth soon cast off their sloughs, and began to heal; a general pleasant warmth was diffused throughout the system, and the vital powers speedily resumed a more active condition."*

759. The Bethania Palladium related an interesting story, a few years ago, with regard to the use of cayenne. The writer remarked, that his attention was arrested one morning, by an old and very active woman, who was picking up brush, and who, according to the statement of her son-in-law, Joshua Newman, was ninety years old. She had just concluded a walk of two miles, when he saw her, and he attributed her surprising energy and vigor, to the fact of her having been in the habit, for forty years, of drinking cayenne tea, every morning, as soon as she was out of bed. During the forty years, her health had been remarkably good, and her prospect for a much longer period of life, was also very promising.

760. The reader who is at the trouble of perusing the foregoing extracts, will probably concede that cayenne is all we claim for it, namely, a pure, healthy stimulant, which acts in harmony with the laws of the human system. It is admitted not to be a narcotic, and of course it does not injuriously affect the brain, or occasion disorder of the nervous system. Nor is it an acrid stimulant, for the authors of the United States Dispensatory admit, that it may be applied externally as a rubefacient, without endangering vesication. I have mixed it with water, and bound it upon my arm in the form of a poultice, but I never knew it to produce a blister. Mixed with alcohol, however, it would probably have this effect, but here a new agent is called into play, by which the action of the cayenne is modified. I have had occasion to notice, in more than one instance, that men employed in preparing pepper sauce—working among the green pods of the capsicum from morning till night—complain of a

* Eberle's Practice, 4th edition, vol. i. p. 494.

severe, burning sensation in their hands, which continues for twenty-four or thirty-six hours after they have desisted from their labor, but their hands, in the meantime, do not present any unnatural appearance, or exhibit even the slightest marks of redness.

761. *Adulterations of cayenne.* People should be very cautious of whom they purchase cayenne, for it is adulterated in a great variety of ways. Even those who should be above suspicion, are known to mix it with one-fourth Indian meal, and color it with red paint, or dye-stuff. Logwood, red saunders, ginger, salt, red lead, the bark of the sycamore, and various other barks, and dye-woods are added to it, with a view to its adulteration. The African cayenne is also mixed with the Bombay or chilly peppers, but the fraud may be readily detected by the taste and smell. The grocers and druggists seldom have a pure article, and frequently it is little better than poison.

762. Some of the substances used in the adulteration of cayenne, may be readily detected, but others, again, elude the most rigid scrutiny. Paris, in his Pharmacologia, says, red lead may be detected by boiling some of the suspected pepper in vinegar, filtering the solution, and adding to it the sulphate of soda; by this process, a white precipitate will be formed, which, after being dried, exposed to heat, and mixed with a little charcoal, will yield a metallic globule of lead. Those who have not an opportunity of trying this experiment, may burn some of the cayenne in a shovel, over the fire, and if a black sediment remains, red lead, or some other injurious mineral may be suspected.

763. The bright red color of cayenne, which we sometimes observe, is owing to the presence of dye-wood, or some kind of red paint.

764. Properties and Uses. Cayenne is known as possessing an extremely pungent taste, which continues for a considerable length of time. Its properties are imparted to water, and alcohol, but more completely to the latter than to the former. The African cayenne, as I have said, is superior to that of the East or West Indies. It is not so pungent or fiery, when first taken into the mouth, but it possesses more real strength, is more gentle in its operation, and much more enduring in its effects. The Bombay or chilly pepper, is liable to occasion distress, and should not be used in medicine. The cayenne from Guiana, in South America, appears to be equal in every respect to the African, but it is very rarely imported into the United States.

765. Cayenne is the best and most efficient stimulant known,

and though freely employed, does not occasion any of the evil consequences which flow from the use of acrid, narcotic, or poisonous stimulants. Taken into the stomach, it produces a pleasant sensation of warmth in that organ, which soon diffuses itself throughout the whole system. It has the effect to equalize the circulation, and hence its value in fever, inflammation, and all those diseases which depend upon a morbid increase of blood in any particular part of the body. By its equalizing influence, it reduces a full and bounding pulse, or gives it force and vigor, where it is thread-like, and feeble.

766. In a sudden cold, nervous debility, weakness of the digestive organs, flatulency, heartburn, distress occasioned by indigestible food, faintness of the stomach, cold hands and feet, and pains in any part of the body, cayenne may be used with the utmost advantage. If the stomach is very cold, it should be taken in a small quantity at a time, gradually increasing the dose, or it may occasion severe pain and distress. The same precaution should be observed, if the stomach is empty. Preceded by a tea-cupful of broth, milk porridge, or any soothing liquid, it may be taken in the usual dose, with impunity. I knew a gentleman who had been unwell for several days, to take a large tea-spoonful of cayenne in the morning, on an empty stomach, and such was the distress which it caused for a few minutes, that he declared the medicine was a dangerous one, and would never touch it again. The difficulty arose, however, from the want of a little prudence, or judgment, in its administration.

767. Half a tea-spoonful of cayenne two or three times a day, mixed with molasses or honey, is an excellent remedy in costiveness, and affords relief, without weakening the patient, or giving rise to profuse discharges. It procures a natural evacuation of the bowels, without leaving them in a weak or torpid condition, as is the case with purgatives. The pepper pods, swallowed whole, may be used for the same purpose. I have known persons to take thirty or forty of them in a day, where the bowels were extremely sluggish or inactive.

768. Copious hemorrhage from the lungs, is speedily checked by the use of cayenne and the vapor bath. These have the effect to render the circulation active in every part of the body, and consequently, they diminish the pressure of blood to the lungs, thereby affording an opportunity for a coagulum to form around the ruptured or bleeding vessel. (38.) By a similar agency, congestion of the brain, inflammation of the brain, pleurisy, rheuma-

tism, dysentery, and all kindred diseases, are cured with a facility that is sometimes truly astonishing.

769. In irritation of the bladder, cayenne sometimes increases the distress, but if the skin is kept moist and warm, by the patient being in bed, or seated near the fire, the unpleasant symptoms will be either prevented, or greatly modified.

770. The thirst which arises in scarlet, typhus, and other fevers, is effectually allayed by giving cayenne tea, in small and frequent doses. If the skin is hot and dry, it will also have the effect to excite a perspiration.

771. Where it is necessary to produce an immediate effect upon the system, the cayenne should be scalded, because it is then more active and diffusible.

772. Cayenne made into pills, is a convenient form of the medicine, in some cases, as will be specified hereafter, under the head of compounds.

773. A tea-spoonful of cayenne, mixed with molasses, or honey, and taken on going to bed, at night, is a valuable remedy in cough. I have prescribed it in repeated instances, and always with favorable results. Combined with a portion of slippery elm, it is still more efficacious.

774. In wounds, or sores of any description, which are painful, and in a high state of inflammation, great benefit is to be derived by sprinkling them slightly with the dust of cayenne, previous to the application of a poultice, or other dressing. It eases the pain, allays the inflammation, and disposes the part to assume a healthy action. Sprinkled on fresh cuts, also, it is equally beneficial, but it should be so finely pulverized, as not to act as a mechanical irritant.

775. Cayenne may be beneficially used as a snuff in headach, and in any obstruction of the nostrils arising from a cold.

776. Weak cayenne tea is an excellent wash for sore, or inflamed eyes. This is admitted by the medical faculty. It should be employed milk warm, as it has been found that cold applications to the eye, although they may produce temporary relief, are followed, in many cases, by subsequent injury.

777. We are informed that the juice of pepper pods, is put into the eyes of slaves in the West Indies, by way of punishment,

but it is thought by some to clear their eyes, and the Indians use it accordingly, when they go on a fishing excursion.*

778. Dr. Thomson informed me, that his sight became imperfect when he was fifty years old, but by working among cayenne for three days, he was enabled to see the smallest print as legibly as he could before see the large letters of a sign, across the street. He mentioned to me the case of a Mrs. Mitchell, an aged woman, whose sight was very dim, but by an application of cayenne, it was immediately restored.

779. I was consulted several months ago, by a gentleman who had nearly lost the sight of one of his eyes. He had called upon an oculist, who suggested that a cataract was probably forming, and intimated that it would be necessary to perform an operation. I advised him to wash his eye two or three times a day with weak cayenne tea, milk warm, to which was added a small portion of bayberry and lobelia, and in a fortnight, his sight was entirely restored.

780. The burning sensation which is produced by the external application of cayenne, is varied according to circumstances. If the sensibility of the skin is blunted, the strongest tincture may be used with impunity, but in other cases, weak pepper sauce may be sufficient to occasion burning. If the sensation is very severe, relief may be obtained by sponging the part with cold water, and taking a dose or two of cayenne, or black pepper, internally.

781. Cayenne is sometimes brought in contact, by accident, with external sensitive parts, and in such cases, the frequent application of cold milk, or cream, will serve to allay the pain.

782. *Dose.* If the cayenne is pure, it may be given in the dose of from a half to a whole tea-spoonful, steeped in hot water, or added to bayberry, or some other tea. It is frequently taken in cold water, or milk, with sugar to suit the taste, and this is always preferable, where the individual is exposed in the open air. Given to produce a perspiration, the warm tea should be employed, and the patient should be in bed, or seated by the fire, with a blanket around him, if the season renders it necessary. The dose should be repeated every hour, until the skin becomes moist.

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* Barham's Manuscripts, *vide* Sloane's Voyage to Barbadoes, etc. London, 1707.

BLACK PEPPER.

Piper Nigrum—The Fruit or Berries.

783. Black pepper is the product of a vine or creeping plant, which grows wild in the East Indies, and is cultivated in Sumatra, Java, Borneo, the Philippines, and other neighboring islands. The supplies for the United States are chiefly derived from Sumatra. In the cultivation of the pepper, the ground is divided into regular squares of six feet, and planted with a species of thorny shrub, which is intended for the support of the vines. Young shoots from the plant are then inserted into the ground, and suffered to grow, without much attention, for three years, when they reach the height of ten or twelve feet, and begin to bear fruit. They are then cut off about three feet from the ground, and being loosened from the shrubs to which they cling, are bent into the earth. This process gives fresh vigor to the plants, and in the ensuing season, they yield a plentiful crop, instead of exhausting themselves in leaves.

784. The fruit is five months in maturing, hanging in thick clusters upon the vines, and assuming, when fully ripe, a bright red color. It is gathered at this period, and spread upon mats, in the sun, to dry, when it soon becomes black, and shrivelled. If collected at too early a period, it turns to dust in its removal from place to place, and especially on being rubbed between the hands, which is the usual test for good pepper.

785. As a general rule, the vines produce two crops annually, one of which is gathered in September, and is called the greater crop, and the other in March, called the lesser or half crop. In some districts, however, where the soil and climate are particularly favorable, there is a constant succession of blossoms and fruit, so that the latter is gathered the whole year round.

786. The pepper plant is in its greatest perfection during the seventh or eighth year of its growth, and by the expiration of two or three more years, it commences gradually to decline.

787. The *white pepper* is nothing more than the berries deprived of their outer coat, which is done by steeping them a fortnight in water, drying them in the sun, and rubbing them briskly between the hands. By this process, however, they are deprived of some of their properties, for a peculiar flavor resides in the outer coat, which is not found in any other part of the berry. For a long period, the Europeans thought the white pepper was the product of a plant differing from that which furnished the black, and believing it to be of superior quality, were in the habit of purchasing it at exorbitant prices.

788. Properties and Uses. Black pepper has an aromatic smell, and a pungent and very agreeable taste. It yields its virtues partially to water, and entirely to alcohol. It is a permanent stimulant, and may be used as a substitute for cayenne, when that article cannot be obtained. In flatulence, indigestion, nausea, and want of appetite, it may be usefully employed.

789. It is worthy of remark, that Dr. Louis Frank, physician to her majesty, Maria, Duchess of Parma, resorted to the use of black pepper in ague and fever, when other remedies had failed, and cured fifty-four out of seventy of his patients. He gave the seeds in the form of pills, administering from five to eight a day, and he says no one of his patients required more than seventy or eighty of these seeds, to effect a perfect cure.*

790. Black pepper is not so pure a stimulant as cayenne, but is nevertheless a valuable remedial agent. The infusion, made by steeping a tea-spoonful of the powder, in a tea-cupful of hot water, may be given with great advantage in the exhausting diarrhœa which sometimes accompanies scarlet and typhus fevers. The dose may be repeated at the expiration of two hours, if necessary. I have known this medicine to arrest the discharges, in critical cases, when all other treatment seemed to be of no avail.

791. The ordinary dose of black pepper, is a tea-spoonful, steeped in hot water, as already mentioned. It is sometimes steeped in boiling milk, and in that form, is comparatively pleasant to the taste.

GINGER.

Zingiber—The Root.

792. Ginger is the root of a plant which is cultivated both in the East and West Indies. The stalks wither in January or February, when the roots are dug, and prepared for use. If intended for what is termed *black ginger*, they are washed, scalded, and dried; but if for *white ginger*, they are scraped very carefully, and dried in the sun. The latter is mostly prepared in Jamaica, and comes to us in jars. The West India ginger is considered better and stronger than that of the East Indies. In the former country, the roots are eaten with salads, and when three or four months old, are preserved in sirup.

793. Our principal supplies of ginger are derived from Calcutta.

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* Eberle's Therapeutics, 4th edition, vol. ii. p. 189.

794. Properties and Uses. Ginger has an agreeable, pungent, aromatic taste, and is a very good substitute for cayenne, as a stimulant. It is grateful to the stomach, and is particularly useful in flatulency, colic pains, and a cold, languid, or feeble state of the system. Made into tea, and drank warm on going to bed, it will relieve a sudden cold, or slight attack of disease. A large tea-spoonful of the powder may be taken at a dose. It should never be boiled, as this impairs its strength, and dissipates its aromatic taste. The tea, sweetened with sugar, molasses, or honey, is a wholesome and refreshing drink, in summer. Milk may be added, if desirable.

795. A piece of ginger root held in the mouth, and slowly chewed, is recommended by Dr. Thomson, as useful in coughs.

796. *Preserved Ginger.* Take green ginger root, scrape it clean, cut it into thin slices or shavings, and simmer it in water over a slow fire until it is soft, or tender; then remove the ginger, and add sugar in proportion to the liquid, simmering it gently, as before, until a thick jelly is formed; this done, pass the whole through a sieve or cloth; add the ginger which was removed, and simmer again for two or three minutes. This is an excellent, as well as a wholesome preserve. It is warming and strengthening to a weak stomach, and is beneficially employed in coughs, and colds.

797. *Ginger Sirup.* Take of ginger root, bruised, three ounces, boiling water, a pint; steep for twenty-four hours, strain, add three pounds of loaf sugar, and dissolve with a gentle heat, so as to form a sirup. This is used to give a pleasant flavor to drinks, and is frequently employed to cover the taste of nauseous medicines.

798. *Ginger Beer.* This beverage, which was formerly so popular in England, under the name of *ginger pop*, is made as follows: Take of loaf sugar, one pound, cream of tartar, one ounce, bruised ginger, two ounces; add two gallons of boiling water, and ferment for twenty-four hours with yeast.

799. *Ginger Beer Powders.* These are prepared in the manner of soda powders. One drachm and two scruples of pulverized loaf sugar, five grains of pulverized ginger, and twenty-six grains of the bicarbonate of soda, are put into a *blue paper;* and thirty grains of tartaric acid into a *white paper*. Each powder is dissolved in half a pint of water, and the solutions mixed, which form a pleasant effervescing draught.

800. *Ginger Wine.* Take of bruised ginger, six pounds, water, five gallons; boil for half an hour, and add fourteen pounds of sugar; continue the boiling till this is dissolved, then cool, and add seven lemons, sliced, and a pint and a half of brandy; ferment with a little yeast, confine in a tight cask for three months, and then bottle.

ASTRINGENTS.

801. Astringents, on being chewed, pucker the mouth, and communicate a sense of roughness to the tongue and palate. Those recommended in this work, are derived from the vegetable kingdom, and are not of a deleterious nature. They are dependant for their astringency on *tannin*, (592) a substance well known to the intelligent reader, as being used in the tanning of leather. It is found in a large number of plants, and is associated with *gallic acid*, which was at one time supposed to be the astringent principle itself.

802. The old school physicians rarely employ vegetable astringents, but make use of those from the mineral kingdom, as aqua fortis, sugar of lead, and white vitriol. These are violent poisons, and necessarily injurious to the human system, even though they should be taken in very minute doses.

803. Astringents render the parts to which they are applied more dense and firm, or in other words, they produce a "condensation of the living animal fibre or muscular tissue." Employed in the form of a poultice, they have a tendency to dry and shrivel the skin, and for that reason, should not be used in poultices where it is necessary to promote suppuration, and hasten the discharge of matter.

804. "Cold," says Dr. Cullen, "is a powerful astringent, causing a contraction of the vessels on the surface of the body, and thereby producing paleness, and a suppression of perspiration."

805. Cold water is a well known astringent, and is employed as such to check the bleeding of slight wounds.

806. Astringents, and animal jellies, or any gelatinous substance employed to nourish the sick, should not be taken into the stomach at the same time, as the tannin of the astringents combines with the gelatin, and forms a solid, indigestible mass.

807. Vegetable astringents may be properly termed *detergent* or *cleansing medicines*, for they have the effect to cleanse the inner or mucous coat of the stomach and bowels, by combining

with its vitiated secretions, and carrying them out of the body. Hence the great value and importance of this class of remedies. For example, the morbid substance which collects on the tongue and roof of the mouth, in fevers, and which is sometimes present in the morning, on rising from bed, particularly if the individual has been indulging in a late supper, or the use of spirituous liquors, is effectually detached by a gargle of some astringent tea; and it is by a similar process, that the astringent medicines act upon the mucous membrane of the stomach and bowels, removing its morbid or vitiated secretions, and enabling it to perform its functions in a natural and healthy manner.

808. Dr. Thomson has applied the term *canker*, to the morbid substance in question, and therefore, he denominates the astringents which he employs in its removal, *anti-canker medicines.* I may here remark, that he borrowed the term canker from the New England people, for they almost universally make use of it, in speaking of disease. Whether they have a sore mouth, an eruption of the skin, or any bad humor of the body, they say it is caused by canker, and they certainly employ the word in a correct sense, for, according to the best authorities, canker signifies anything that corrodes, corrupts, or destroys.

809. Attention is required in the proper selection of astringents, for some of them are so binding, that they cannot be used with safety. Marsh rosemary, or hemlock, for example, taken for any length of time, will occasion difficult breathing, and other distressing symptoms. Dr. Thomson has established the rule, that any astringent which, on being chewed, excites the secretion of saliva, and leaves the mouth clean and moist, may be safely employed in medicine. Bayberry answers to this description, for in addition to its astringency, it is sensibly pungent and stimulating.

810. An emetic should always be preceded by an astringent, in order that the latter may detach the vitiated matter from the mucous coat of the stomach, previous to vomiting.

811. Astringents are useful in hemorrhage from the stomach, because they come in immediate contact with the bleeding vessels, and also from the rectum, administered in the form of an injection. They are likewise given to restrain hemorrhages from organs with which they cannot be brought in immediate contact, as the lungs, and uterus, but the particular mode in which they operate, has not been exactly ascertained. Dr. Thomson of Edinburgh, supposes that they pass into the blood, and thus produce their beneficial effects; but others are of the opinion, that they act upon the

general system, through the medium of the stomach, and control the hemorrhage in an indirect manner. The latter opinion is the more plausible.

812. In the treatment of diarrhœa, and dysentery, astringents are important remedies, but they require to be used in combination with some stimulant, as cayenne, or rheumatic drops. Astringents alone, would check the discharges at the risk of doing injury to the patient. The acrid or vitiated contents of the bowels would be retained, the local inflammation, already present, would be increased, and colic, fever, headach, or some other form of disease, would be developed. In diarrhœa, and dysentery, we must endeavor to counteract the undue determination of blood to the bowels, which we can always accomplish by the use of stimulants, and the vapor bath, and in conjunction with these, astringents may be employed with safety and advantage.

813. Astringent injections into the urethra, are very useful in gonorrhœa, after the local inflammation has been subdued, or in the early stage of the disease, previous to the development of the inflammation. They may consist of raspberry, sumach, bayberry, pond lily, or witch hazel tea, adding cayenne, or rheumatic drops, to give them pungency. The bayberry, however, is pungent of itself, but its pungency may be increased, if desirable. The injections should be milk warm. In gleet, the same treatment is equally beneficial. Dr. Thomson does not approve of injections into the urethra, however, notwithstanding he inculcates the doctrine, that a remedy should be applied, if possible, to the seat of a disease, but I have succeeded in curing cases of gonorrhœa, by this practice, using also some diuretic, when even courses of medicine have failed.

814. In prolapsus uteri or falling of the womb, in which there is more or less relaxation of the parts, astringent injections into the vagina, are productive of beneficial results. In falling of the palate, also, as it is termed, astringent gargles will be of service.

815. Astringent teas are particularly useful as a wash for sores. They are cleansing, and induce a healthy action in the parts. If the sore is irritable, astringents devoid of pungency should be employed, as the raspberry, witch hazel, or sumach; but if it is indolent, or wanting in sensibility, bayberry is preferable, and it may be used in combination with cayenne, or rheumatic drops.

BAYBERRY.

Myrica Cerifera—The Root.

816. This shrub, called also candle berry, and wax myrtle, extends from New England to Louisiana, inhabiting both dry and wet soils. It is usually found, however, in neglected fields, and on the sides of stony hills. Its growth is much influenced by soil and climate. In Louisiana, it reaches to the height of ten or twelve feet, but in Massachusetts, where it is very abundant, I have seldom known it to exceed four or five feet.

817. The stem of the bayberry is covered with a grayish bark, and is thickly branched at the top. The leaves are narrow and tapering at the base, twisted in their mode of growth, and covered with a scarcely perceptible down. They are of a shining green upon the upper surface, and generally have a few remote teeth near the apex or point. The flowers appear in May, and in the fruitful shrub, are succeeded by small berries, which adhere to the branches either separately or in clusters. They are green at first, but gradually change to a grayish tint, and in the autumn, assume a dullish white color.

818. A bushel of these berries will yield about four pounds of wax, which is procured by boiling the berries in water, when the wax will separate, and float upon the surface. To render it more pure, it is melted again, passed through a cloth, or sieve, and cast into cakes. In this state, it is brittle, of a greenish color, and similar in texture to beeswax. It is used for a variety of purposes, entering into the composition of shaving soap, tapers, sealing wax, and even a species of blacking. It is also mixed with tallow in the manufacture of candles, which burn with a clear light, and emit a fragrant odor.

819. Bayberry growing in a sandy soil, has a thicker bark upon the root, than that found in other localities, and is considered of a better quality. The roots should be collected early in the spring, or late in the autumn, freed from dirt, and pounded with a mallet, or club, to separate the bark. This should be thoroughly dried, without exposure to a wet or damp atmosphere, and reduced to powder, previous to being used.

820. *Coarse bayberry*, so called, is the residue or bran, which is left after the powder has been bolted, or sifted.

821. The leaves and berries of this shrub, have an aromatic taste and smell, but are not used in medicine.

Bayberry [illegible] Cerifera.

822. Properties and Uses. Bayberry is the most valuable of the astringent or *cleansing* medicines, and is now used by Dr. Thomson, in preference to the compound of these articles, which he formerly recommended. It has an astringent and bitter taste, conjoined with a good deal of pungency. It produces a stimulating effect upon the mouth, and leaves it clean and moist. It tends in an especial manner to cleanse the inner coat of the stomach, which it does by combining with the morbid or vitiated secretions upon its surface, and causing them to be detached. Hence, it should always be given before the administration of an emetic. It produces the same cleansing effect upon the mucous membrane of the bowels. Used as a gargle, also, in putrid or ulcerated sore throat, it detaches large flakes or masses of very offensive matter.

823. Professor Barton, in his Collection toward a Materia Medica, quotes Dr. Matthew Wilson, as saying that bayberry often acts as a gentle purgative, but this is an erroneous opinion, for instead of being cathartic, it rather tends, in large and frequent doses, to constipate the bowels, and therefore should be combined, as a general thing, with a portion of cayenne.

824. Dr. Bigelow, in his Medical Botany, observes, on the authority of Dr. Dana, that bayberry, in "doses of a drachm, (a large tea-spoonful) produces a powerful burning sensation, and vomiting." Dr. Thatcher further informs us, that Dr. James Mann employed bayberry as an emetic, and that it was equal in strength to ipecacuanha. These writers are more theoretical than practical, for it is well known to those who have employed bayberry extensively, that it has no tendency whatever to occasion vomiting, unless the stomach is in a very disordered state. A pint of the tea, after the organ is thoroughly cleansed, would not even excite nausea.

825. There is no form of disease, in which bayberry, if properly administered, will not prove beneficial. In some parts of Massachusetts, the decoction is in common use as a remedy in scarlet fever; and it is given without any particular regard to quantity. If the throat is affected, it is also employed as a gargle. I have been credibly informed by parents, who knew nothing of Dr. Thomson, that they have cured their children of scarlet fever, by this article alone, after the attending physicians had given them up as hopeless.

826. Bayberry is a valuable remedy in diarrhœa, and dysentery. The decoction, administered in the dose of a tea-cupful, with a table-spoonful of rheumatic drops, and repeated two or three times, will rarely fail to effect a cure, in any ordinary case.

827. The tea is a useful wash in badly conditioned sores, and should always be employed, where its pungency is not an objection.

828. The powder makes a very good dentrifice, and not only cleanses the teeth, by its mechanical action with the brush, but renders the gums more sound and healthy. Scented with the fragrant oils, as golden rod, or spicy wintergreen, it furnishes a delightful snuff, which may be used to advantage in headachs, and colds.

829. The dose is a tea-spoonful of the powder, steeped in a tea-cupful of boiling water, and sweetened to suit the taste.

WITCH HAZEL.

Hamamelis Virginica—The Leaves.

830. The witch hazel has an oblique trunk, from six to twenty feet high, which is divided into irregular, knotty branches. The bark is smooth and grayish, diversified with ash colored spots. The leaves, which vary considerably in size and shape, have wavy, irregular margins, and tapering, or roundish ends. The blossoms are yellow, and scattered along the branches in clusters of from three to five. They do not appear until the leaves begin to decay, and remain in bloom until the snow falls, imparting to the woods a gay, and spring-like appearance. The nuts or fruit, are contained in a brownish colored shell, and do not ripen until a year after the appearance of the blossoms.

831. The witch hazel is a native of the United States, and extends from Canada to Florida. It is found in damp woodlands, and along the banks of streams. Impostors have made use of the branches for divining rods, pretending they could thereby discover water, and precious ores. The bark and leaves dye brown, and with the addition of copperas, an excellent black.

832. Properties and Uses. The leaves are an excellent astringent, and in combination with cayenne, may be freely employed in those cases in which astringents are necessary. They have the reputation, also, of being antiseptic and tonic. The infusion is useful in bleeding from the stomach, and administered in the form of an injection, affords great relief in irritable piles. Dr. Thomson also recommends an injection of it into the vagina, as a remedy in the bearing down pains of women, which occur at other periods than during labor. He has told me that it will always afford immediate relief, but I suspect, although a useful remedy, he has somewhat overrated its virtues. The

Witch Hazel Hamamelis Virginica

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tea is of great value in washing or cleansing irritable sores, and corroded surfaces. The bark is made into a poultice by the Indians, and applied to painful tumors, and sore or inflamed eyes.

WHITE POND LILY.

Nymphæa Odorata—The Root.

833. The white pond lily, called also water lily, is found in various parts of the United States, growing in ditches and stagnant pools. It is chiefly remarkable for a large white flower, of delicious fragrance, which closes at night, and opens again about sunrise in the morning. The roots creep through the mud to the distance of several feet. They are rough, blackish, somewhat fibrous, and two or three inches in diameter. The leaves float upon the water, and are nearly round, with a cleft or opening at the base. The upper surface is smooth, glossy, and of a bright green; the under surface is reddish, having prominent veins radiating from the centre. The stems, both of the leaves and flowers, spring directly from the root, and vary in length from ten inches to five feet, according to the depth of the water. They are about as thick as a common pipe stem, and are perforated from one extremity to the other with small tubes. The flowers expand in June or July, and are of a beautiful white color, variegated occasionally with a delicate shade of red.

834. In some parts of Canada, the leaves of the pond lily are boiled, when they are young, and eaten with salt and vinegar. The roots are the only part used in medicine. They should be procured in the autumn, freed from dirt, and cut into thin slices, preparatory to drying. Dr. Withering says they are used in Iceland to dye brown.

835. Properties and Uses. The root of this plant possesses a high degree of astringency, with a small portion of bitterness. The tea is useful in bowel complaints, and all diseases requiring an astringent medicine. It is beneficial as a wash for sores, and also as a gargle in putrid, or ulcerated sore throat. Injected into the urethra, or vagina, it is a valuable remedy in gleet, fluor albus, and other diseases to which these parts are liable. It should not be taken internally in large and repeated doses, without the addition of cayenne, as it is liable, from its astringency, to render the bowels costive. One or two tea-spoonfuls of the powder, added to some slippery elm, or pounded cracker, with a small portion of

ginger, forms an excellent poultice for indolent, or ill-conditioned ulcers.

836. A tea-spoonful of the powder, steeped in hot water, may be taken at a dose.

837. The root of the *yellow water lily*, which also grows in ponds, and stagnant waters, is similar in properties to the above, but is not considered quite so efficient.

BLACK BIRCH.

Betula Lenta—Bark of the Trunk.

838. The black birch is a stately and beautiful tree, and is found from Canada to the mountainous regions of Georgia. According to Michaux, it abounds in the middle states, particularly in New York, Pennsylvania, and Maryland, but further south, it is confined to the summit of the Alleghanies, on which it flourishes to their termination in Georgia. In Virginia, it is called mountain mahogany, while in New England it is known by the names of sweet, spicy, cherry, and black birch, but the latter is the most common. In situations favorable to its growth, it attains the height of seventy or eighty feet, with a diameter of two or three feet. The young trees and branches are covered with a brownish bark, dotted with white transverse lines, about an eighth of an inch long. In thick woods, the bark of the trunk hangs in shreds, of a whitish color, and silken lustre, detaching itself transversely in a number of layers. The leaves have some resemblance to those of the cherry tree, and are about three inches long; they are heart-shaped at the base, bordered with acute, double teeth, acutely pointed, and have parallel veins on the under surface.

839. The wood of the black birch is of a reddish color, having some resemblance to mahogany, especially when deepened by exposure to the atmosphere, and is much used in cabinet work. Michaux recommends it to the lovers of foreign vegetables, as eminently adapted, by the beauty of its foliage, to figure in their parks and gardens. If an incision be made into the bark in the spring, when the leaves are beginning to appear, the sap will exude almost spontaneously, and in very large quantities.

840. Properties and Uses. The bark of the black birch has a fragrant smell, and an aromatic and sweetish taste, very nearly resembling that of the *spicy wintergreen*. Hence, it is very useful in flavoring medicines. It is moderately astringent, and is

Wild Red Raspberry. Rubus Strigosus.

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an excellent remedy in bowel complaints. Dr. Thomson says he has made much use of it in dysentery. In the form of sirup, with the addition of peach-meats, or the meats of cherry-stones, it is a valuable restorative in convalescence from that disease. The tea makes a pleasant drink for children, and may be given to patients freely during the operation of a course of medicine.

WILD RED RASPBERRY.

Rubus Strigosus—The Leaves.

841. The stem of this plant is upright, branching, three or four feet high, of a reddish color, and thickly covered with very stiff bristles. The leaves are in one or two pairs, supported on a hairy foot-stalk, with an odd and larger one at the end. They are edged with acute teeth, wrinkled, and marked with parallel lines on the upper surface, of a silvery whiteness beneath, and terminated by long, slender points. The flowers are white, and disposed in little nodding clusters, succeeded by a profusion of red berries.

842. This plant is found throughout the Northern and Southern States, growing in dry, waste lands, and on stony hills. It is very abundant in New England. In Tennessee, it grows on the mountains among the rocks. I never saw it in Pennsylvania, excepting on the farm of Dr. Logan, near Philadelphia, where it was cultivated. Dr. L. informed me that he had been in search of it for more than two years, and at length found it in abundance on the top of the Pokono Mountains. It blossoms in June, and again in the latter part of summer, producing, if the season permits, a second supply of fruit in September.

843. The leaves of this plant are becoming very fashionable in some sections of the country, as a substitute for tea and coffee. The strong infusion can scarcely be distinguished from black tea, and is infinitely more wholesome. With the addition of sugar and milk, it is a very pleasant beverage.

844. "The fruit of the raspberry," says Dr. Alcott, in his Young Housekeeper, "is a good deal like the strawberry in its nature, being cooling, gently laxative, and in the language of medical books, antiseptic—by which is meant, that it corrects any putrid tendency in the stomach and bowels, especially during the hot weather. It is as nutritious as the strawberry, if not more so; and it does not more readily become acid in the stomach."

845. Properties and Uses. The leaves of the raspberry are moderately astringent, with a slightly bitter, and very agreeable aromatic taste. The infusion is an excellent remedy in the bowel complaints of children; and if used in season, will generally effect a cure. It should be given in warm draughts, and administered also by way of injection. The addition of a small portion of slippery elm, will render it still more efficacious.

846. Dr. Thomson observes that a strong tea of raspberry, with the addition of a small quantity of cayenne, and nerve powder, is a valuable medicine for women in labor, quieting the pains if untimely, and rendering them more efficient, if labor has really commenced. There is no doubt that the remedy is a good one, but I presume that composition, black birch, or any warming and gently stimulating tea, would answer the purpose equally well.

847. Raspberry tea is a soothing and cleansing wash for ulcers, scalds, burns, and all excoriated surfaces, which are very sore or irritable.

848. *Raspberry Cordial.* Take a quart of raspberries, and a pound of loaf sugar; mash the raspberries, and strew the sugar over them, having first pounded it slightly. Let the raspberries and sugar stand till next day, keeping them well covered, then put them into a thin linen bag, and squeeze out the juice. To each quart of this, add a quart of double rectified whiskey. Cork tightly, and set it away for two or three days, when it will be fit for use.*

849. Raspberry vinegar is made in the same manner as the cordial, only substituting the best white vinegar for the whiskey. Mixed with water, either of these preparations is a pure, delicious, wholesome drink, particularly in summer.

850. *Raspberry Jelly.* Gather the fruit when fully ripe, on a dry day; put it into a jar, and cover it closely. Set the jar in a sauce-pan, about three parts filled with cold water; place the pan over a gentle fire, and let the fruit simmer for about half an hour. Take the pan from the fire, and pour the contents of the jar into a jelly bag; pass the juice through the bag twice, without squeezing or using any pressure; to each pint of the juice, add a pound and a half of good loaf sugar, pounded; when this is dissolved, put the juice into a preserving pan, over the fire, and boil gently until the scum ceases to rise, stirring and skimming it all the time; pour the jelly, thus formed, into pots, while it is warm, and after it has cooled, cover the pots with paper wetted with brandy.*

* Housekeeper's Register.

851. Half a pint of this jelly, dissolved in a pint of brandy, or vinegar, will afford excellent *raspberry brandy*, or *vinegar.**

852. *Raspberry Jam.* Take equal parts of powdered loaf sugar and raspberries; put the fruit into a preserving pan, and bruise or mash it well with a silver spoon; let it boil six minutes, and then add the sugar, stirring it well with the fruit; as soon as it boils a second time, skim, and continue the boiling fifteen minutes.* This, dissolved in water, is also a refreshing drink for the sick, and is particularly useful in putrid, or ulcerated sore throat.

EVAN ROOT.

Geum Rivale—The Root.

853. This plant, known by the names of chocolate root, throat root, bennet, purple avens, water avens, and cure-all, grows in Canada, New England, New York, and Pennsylvania, inhabiting swamps, and wet spongy meadows. It is somewhat conspicuous in the month of June, for its dark colored, and rather handsome flowers. The root is six or seven inches long, and about as thick as the little finger, with a number of brownish colored fibres. It sends up one or more stems, which are two feet high, purple, hairy, and branching near the top. The leaves of the root stand on long, hairy foot-stalks, and are generally in threes, or fives; the odd or terminal one is the largest, and is divided into lobes, with a number of leafy appendages along the foot-stalk. They are wrinkled, hairy above and below, and bordered with double teeth, of unequal sizes. The stem leaves are small and few, consisting usually of three acute lobes or divisions. The flowers are nodding and purple, standing singly upon the tops of the branches. The seeds are furnished with feathery bristles, which are about half an inch long, and slightly hooked at the end.

854. Properties and Uses. The Evan root is moderately astringent, with a slightly bitter taste, and is used both as a common drink, and medicine. The root should be collected early in the spring, cut into slices, carefully dried, and reduced to a coarse powder. For table use, this is boiled, and sugar and milk added, which renders it a very pleasant beverage. Its taste resembles that of chocolate, which has given rise to the name of chocolate root. This preparation is much used in some parts of New England, in-

* Housekeeper's Register.

stead of tea and coffee, and though astringent, it does not appear to constipate the bowels. It is useful in dysentery, diarrhœa, bleeding from the stomach, a weak or languid appetite, and a variety of similar complaints. The tea may be used as a wash for irritable or smarting sores; and it is also recommended by Dr. Cutler as a gargle, and drink, in ulcerated sore throat, in which I have found it very beneficial.

SUMACH.

Rhus—Three Species—Leaves and Berries.

855. *Smooth or Upland Sumach—Rhus Glabrum.* This is the species most commonly used. It grows along fences, in neglected fields, and on the sides of stony hills. The stem rises from four to twelve feet high, and is divided into straggling branches. The leaves are arranged in two rows, on a smooth foot-stalk, consisting of nine or ten pairs, with an odd one at the end. They are narrow, three or four inches long, of a dark green upon the upper surface, whitish beneath, and terminated by a long slender point. In the autumn their color changes to crimson or scarlet. The flowers are disposed in thick clusters, and succeeded by red berries, which, in the fertile plant, are very dense. A whitish powder collects upon them soon after the occurrence of frost, which has received the name of "Indian salt." The berries should be collected before this substance is washed away by the rain.

856. *Stag-horn or Velvet Sumach—Rhus Typhinum.* This is called stag-horn sumach, from the resemblance of its branches to the horn of a stag. It is a larger species than the preceding, and rises usually to the height of ten or twelve feet. Occasionally, however, it acquires double that altitude, with a trunk ten or twelve inches in diameter. Growing wild, it is mostly found in low, damp grounds, but it appears to flourish equally well in more elevated situations. In New England, it is cultivated in gardens and pleasure grounds, for ornament. The leaf-stalks and young branches are covered with a soft, velvet-like down. The leaves are similar to those of the *smooth sumach*, but are more numerous, hairy underneath, and somewhat longer. The berries are in a dense cluster, and of a rich, scarlet, velvety appearance. They are liable to be eaten by worms almost as soon as they are matured. The bark and leaves of this, and the preceding species, on being broken, exude a milky juice.

Sumach . Rhus Glabrum

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857. *Mountain or Dwarf Sumach—Rhus Copallinum.* The dwarf sumach is a smaller shrub than either of the above, attaining only the height of five or six feet. It grows in dry, rocky ground. The leaves are tapering at both ends, sharply pointed, and an inch and a half or two inches long; they are of a deep, shining green upon the upper surface, downy beneath, and arranged in pairs, on a winged and hairy foot-stalk. The leaves are palish red, and grow in open, spreading clusters. The leaves, in addition to their astringency, have an acid, and somewhat aromatic taste.

858. These shrubs flower in June, or July, and put forth a profusion of greenish colored blossoms. The berries ripen in autumn, when they should be gathered, selecting for the occasion a clear, dry day. The bark and leaves are astringent, and are used in tanning, and dyeing. The leaves should be collected when full grown, and before they have changed color. The berries of all the species are used in medicine, but those of the smooth sumach are the best. Their only medicinal portion, is the powder or mealy substance which covers them, and this may be readily separated by rubbing them, when perfectly dry, in a sieve, which will allow the powder to pass through, while the berries are retained.

859. The leaves of the dwarf sumach are more astringent than those of either of the other species. The root of this plant, according to Lewis and Clark, is regarded as a specific by the Chippeway Indians, in the venereal. "They use the decoction without any limitation, and it is said to soften the violence of the disease, and to be a sovereign cure in gonorrhœa."*

860. Properties and Uses. Sumach berries are astringent, and pleasantly acid. The tea, sweetened, is useful in strangury, and bowel complaints. It has the color of wine, and makes a pleasant medicinal drink for children. Sweetened with honey, it is beneficial as a gargle in sore throat, and for cleansing the mouth in fever. It is an excellent external application for ring-worms, tetters, and other cutaneous diseases, and also as a wash for offensive sores, having the effect to render them clean and white.

861. Both the leaves and berries are diuretic, but the latter are the most efficient. The leaves may be employed, in combination with other articles, for all the purposes of an astringent.

862. The bark of the root, says Dr. Smith of New York, is considered a valuable antiseptic; in the form of a poultice for old

* Lewis and Clark's Expedition to the Sources of the Missouri, etc., vol. ii. p. 136. Philadelphia, 1814.

ulcers, it is scarcely equalled by any other remedy. Taken internally, it operates as a purgative.

863. The gum which exudes from the bark, on being punctured, during the summer, is beneficial in gleets, and obstruction of the urine. It is most conveniently administered in the form of pills, which will be described, hereafter, among the compounds.

864. The excrescences which form upon the leaves of the sumach, are nearly equal in astringency to galls, and if finely powdered, and made into an ointment with fresh lard, afford a soothing application for piles.

BETH ROOT.

Trillium Pendulum—The Root.*

865. The beth root grows in damp, rocky woods, delighting in a rich soil, and is variously called Indian balm, rattlesnake root, cough root, birth root, ground lily, and drooping trillium. It has a thick, short, wrinkled, fibrous root, and an erect, smooth stem, from one to two feet high, surmounted at the top with three leaves, which are large, roundish, narrow at the base, supported on very short foot-stalks, and terminated by an abrupt point. The flower is white, and drooping, being sheltered beneath the leaves. In the Southern States, it blooms in April, but further north, it does not make its appearance till some time in May.

866. Properties and Uses. The root has a bitter and peculiar taste, somewhat resembling that of unicorn. Chewed for some time, it communicates a pungent sensation to the mouth and throat. It is astringent, tonic, and antiseptic, and is employed internally in uterine hemorrhage, immoderate menstrual discharges, fluor albus, spitting of blood, coughs, asthma, and all difficulties of breathing. The Indian women, both in Canada and Missouri, make much use of it after parturition. The dose is a teaspoonful of the powder, steeped in hot water.

867. The root powdered, and made into a poultice, is recommended by Rafinesque as useful in indolent, or offensive ulcers.

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* This is the *T. cernuum* of Barton and Bigelow, and the *T. latifolium* of Beach and Rafinesque.

HARDHACK.

Spiræa Tomentosa—Leaves and Flowers.

868. The hardhack grows in meadows and low grounds throughout the Northern and Southern States. It is very abundant in many parts of New England. It has a hard, woody root, with a number of erect, purplish, and downy stems, which rise to the height of two or three feet. The leaves are on short footstalks, nearly oval, unequally toothed along the margins, deep green above, and of a whitish or silvery color beneath. The plant blooms in July and August. The flowers are red or purple, and disposed in elegant clusters at the tops of the stems, being large at the base, and gradually tapering to their extremity.

869. PROPERTIES AND USES. The leaves and flowers are bitter, and prominently astringent. The infusion, combined with cayenne, or rheumatic drops, is useful in diarrhœa, and all bowel complaints. It is also a good tonic, and may be given in cases of debility, and want of appetite. Prepared with sugar and milk, says Rafinesque, it forms a very pleasant drink in the protracted stage of cholera. The same writer observes that it never disagrees with the stomach. The Mohegan, and other tribes of Indians, are said to have employed this plant.

HEMLOCK SPRUCE.

Pinus Canadensis—Inner Bark and Leaves.*

870. The hemlock spruce is a large forest tree, attaining the height of seventy or eighty feet, with a trunk four or five feet in diameter, which is of nearly uniform dimensions for nearly two thirds of its length. The branches are horizontal, tapering, and somewhat drooping at their extremities. The leaves, which are arranged in two irregular rows, are flat on the under surface, slightly rounding above, and about an inch and a half in length. The cones are somewhat longer than the leaves, of a brownish color, pendulous, and situated at the ends of the branches.

871. This tree, according to Michaux, forms two thirds of the evergreen woods in Nova Scotia, Maine, Vermont, and the upper part of New Hampshire; but it is less common further

* *Abies Canadensis* of Michaux.

south, and in the Middle and Southern States is found only on the Alleghanies. It is frequent in the woods of Massachusetts. The bark is used for tanning, but is considered inferior to the bark of the oak. It imparts a deep red color to the leather. The *hemlock gum*, which is sold in the shops for strengthening plasters, is procured by stripping the bark from a full grown tree, breaking it into fragments, and boiling it in water. The gum rises to the surface, is skimmed off, purified by boiling a second time, and straining through linen or canvass. In this state it is brittle, and of a dark brown color.

872. PROPERTIES AND USES. The inner bark of the hemlock spruce was formerly used by Dr. Thomson as an astringent or anti-canker medicine, but he found that it was of too binding a nature, and from a belief that it was capable of doing injury, discarded it altogether from his practice. Taken freely for any length of time, it causes a choking sensation, and renders the breathing difficult. The same objection does not apply, however, to the leaves, which are bitter and aromatic, with a slight degree of pungency. Made into a tea, by steeping them in hot water, and drank freely, they produce perspiration, and are beneficial in sudden colds, and rheumatic affections. They are also highly useful in gravelly complaints, and obstructions of the urinary passages. The oil may be employed to flavor medicine. It is also a valuable addition to bathing drops, intended as an application for sprains, bruises, swellings, and rheumatic joints.

MARSH ROSEMARY.

*Statice Limonium**—The Root.

873. The marsh rosemary, called also sea lavender, sea thrift, and ink root, grows in salt marshes, and on the sea coast. It has a fleshy, branching root, of a brown or reddish color, which sends up a smooth, round, naked stem, a foot or more high, and thickly branched at the top. The leaves grow in tufts or branches from the root, and are supported on long footstalks. They are smooth on both sides, very firm and thick, and rounded, or somewhat tapering at the end, which is terminated by a sharp point or prickle. The edges consist of transparent, silvery borders, which may be seen by looking at them against the light. The flowers are small,

* The *S. Caroliniana* of Pursh.

Marsh Rosemary, Statice Caroliniana

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erect, very numerous, of a bluish purple, and arranged upon the upper sides of the terminal branches.

874. The marsh rosemary extends along the sea coast from New England to Florida. It is very abundant in the salt marshes about Boston and Salem. The flowering season is August and September. The roots should be dug early in the spring, or in the autumn after the leaves have decayed, selecting those which inhabit a sandy soil. They should be freed from dirt, cut into thin slices, dried, reduced to a powder, and packed in dry boxes, or drawers, as they are liable to imbibe moisture, and become mouldy. They afford a jet black ink, which is equal to that prepared from galls.

875. Properties and Uses. The root is powerfully astringent, and on being chewed, manifests a bitter and saltish taste. Its virtues are imparted to water, and alcohol. It is a well known antiseptic, and is much used by the people of New England as a remedy in sore mouth, for which purpose they either chew a piece of the root, or employ the decoction as a gargle.

876. The root finely pulverized, and made into an ointment, with tallow, is a soothing application for piles, and may be confined to the parts by means of a bandage, and a piece of lint or folded rag.

877. Benefit is derived from the marsh rosemary in the treatment of cancers. The pulverized root may be made into a paste with the cancer balsam, and applied to the affected part, or the powder may be sprinkled upon the cancer in a thin layer, and the balsam applied over this.

878. The decoction is useful in washing offensive sores, which require to be cleansed.

879. The marsh rosemary is too astringent for internal use, unless combined with a large portion of cayenne. It renders the mouth dry, and parched, gives rise to costiveness, and produces a choking sensation, accompanied with great difficulty of breathing.

TONICS.

880. Tonics are bitter or restorative medicines, and are used in loss of appetite, feeble digestion, and general weakness or debility. They act first upon the stomach, and then upon the remote parts of the body, imparting to the whole system an increase of strength and vigor. It is probable, also, that they enter the circulation, and produce their good effects, in some measure, by their action upon the blood.

881. Tonics are generally bitter, but there are bitter substances which are devoid of tonic properties. Opium, for example, is bitter, but not tonic. A bitter substance, also, may be objectionable as a tonic, on account of some narcotic or purgative property which it contains.

882. The tonics employed by the medical faculty, are frequently of a poisonous, or deleterious nature. As examples of these, I may mention arsenic, oil of vitriol, aqua fortis, verdigris, and green, blue, and white vitriol. These substances are necessarily injurious to the human system, and should be utterly discarded by those who have any regard for their health, or lives.

883. Tonics are of no advantage where the stomach is very much disordered, but after it has been cleansed by an emetic, they have the effect to promote appetite and digestion, and to invigorate the whole system. In severe acute disorders, as fevers, and inflammations, they should not be employed until the disease is subdued. Until this time, they are more injurious than beneficial. In chronic diseases, however, they may be used freely, and always with benefit, provided the stomach is not too much encumbered with morbid or vitiated matter.

884. Tonics are rendered still more beneficial, by combining them with about one twentieth part of cayenne. The best tonic compound with which I am acquainted, is the *spiced bitters.*

885. If the stomach is very weak, or irritable, these remedies should be given in the form of tea, and not in substance, or the indigestible woody matter may increase the derangement of the organ, and perhaps give rise to fever.* The same remark is equally applicable to all other medicines, in powder.

886. Tonics should not be employed after the appetite is sufficiently restored, for if taken to excess, they will excite so keen a relish for food, that the individual may be tempted to eat more than can be digested, and thus, the excess of food will irritate the stomach, and occasion, perhaps, a renewal of the disease.

887. If a particular tonic is used for a considerable time, it loses its effect, and should be laid aside for another, but after a few days, or a week, it may be advantageously resumed.

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* Dunglison's General Therapeutics, p. 123.

American Aspen. Populus Tremuloides.

Large Aspen. Populus Grandidentata.

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POPLAR.

Populus—Two Species—Inner Bark.

888. *American Aspen—Populus Tremuloides.* This tree, called also quaking aspen, and white poplar, is common in Lower Canada, and in the Northern and Middle States, inhabiting open lands, thickets, and the borders of woods. It blooms about the first of April. The flowers or aments are pendulous, and consist of downy or silken plumes, from an inch and a half to two inches long. The bark, unless the tree is very old, is smooth, and sometimes nearly white. The leaves are roundish, edged with small, irregular teeth, abruptly pointed, and supported on long, flat footstalks. The slightest breath of air puts them in motion, and hence the name of quaking aspen. The Highlanders, says the Rev. John Lightfoot, entertain a superstitious notion that our Saviour's cross was made of this tree, and for that reason suppose the leaves can never rest.

889. *Large Aspen—Populus Grandidentata.* The large aspen or bitter poplar, attains the height of forty or fifty feet, with a trunk ten or twelve inches in diameter. It grows both in dry and wet lands, and is by no means so common as the American aspen. The upper part of the trunk, and branches, are covered with a smooth, and somewhat greenish bark. The flowers or aments are two or three inches long, and bloom in May. The leaves, when they first appear, are covered with a thick, white down, which gives them a silvery, or velvet-like appearance; but as they continue to expand, the down gradually disappears, and in a fortnight, or three weeks, they assume their natural color. When fully developed, they are roundish, acute at the end, and bordered with large, unequally sized teeth. They are supported, like the preceding species, on long, flat footstalks, and grow in clusters at the extremities of the branches.

890. The proper season for collecting the bark, is in the spring, just as the sap begins to rise, for it can then be separated from the trunk, or branches, without difficulty. Either before or after it is detached, the epidermis or outside coat should be separated, by an instrument adapted to the purpose. This done, the bark is to be laid in the sun, for a day or two, with the smooth side upward, and then removed to a loft where the sun shines upon the roof, to complete the process of drying, taking care that the pieces of bark are not in contact.

891. Properties and Uses. The bark of the American aspen is a mild and pleasant tonic, and may be given freely to children, where a tonic medicine is required. The bark of the large aspen is more active and bitter, and if taken from a tree growing in wet, or swampy land, will operate as a purgative. A mixture of the two, however, in the proportion of one third of the latter, to two thirds of the former, will keep the bowels gently open, without inducing copious, or watery stools. I am not aware, however, that the bark obtained from the aspen growing in a dry, or sandy soil, will occasion purging under any circumstances.

892. Poplar bark has the advantage of being a very pleasant bitter, and with the addition of sugar, is not considered disagreeable by the generality of patients. The tea is a valuable remedy in debility, emaciation, want of appetite, feeble digestion, faintness at the stomach, headach, diarrhœa, worms, and an impure state of the blood. It possesses superior diuretic properties, and is particularly useful in gonorrhœa, gleet, strangury, obstructed urine, and other diseases of the urinary organs. Consumptive people, and those who have been suffering long from disease, are greatly benefited by its employment. The ordinary dose, is a level teaspoonful of the powder, with double the quantity of sugar, steeped in hot water, and repeated two or three times a day.

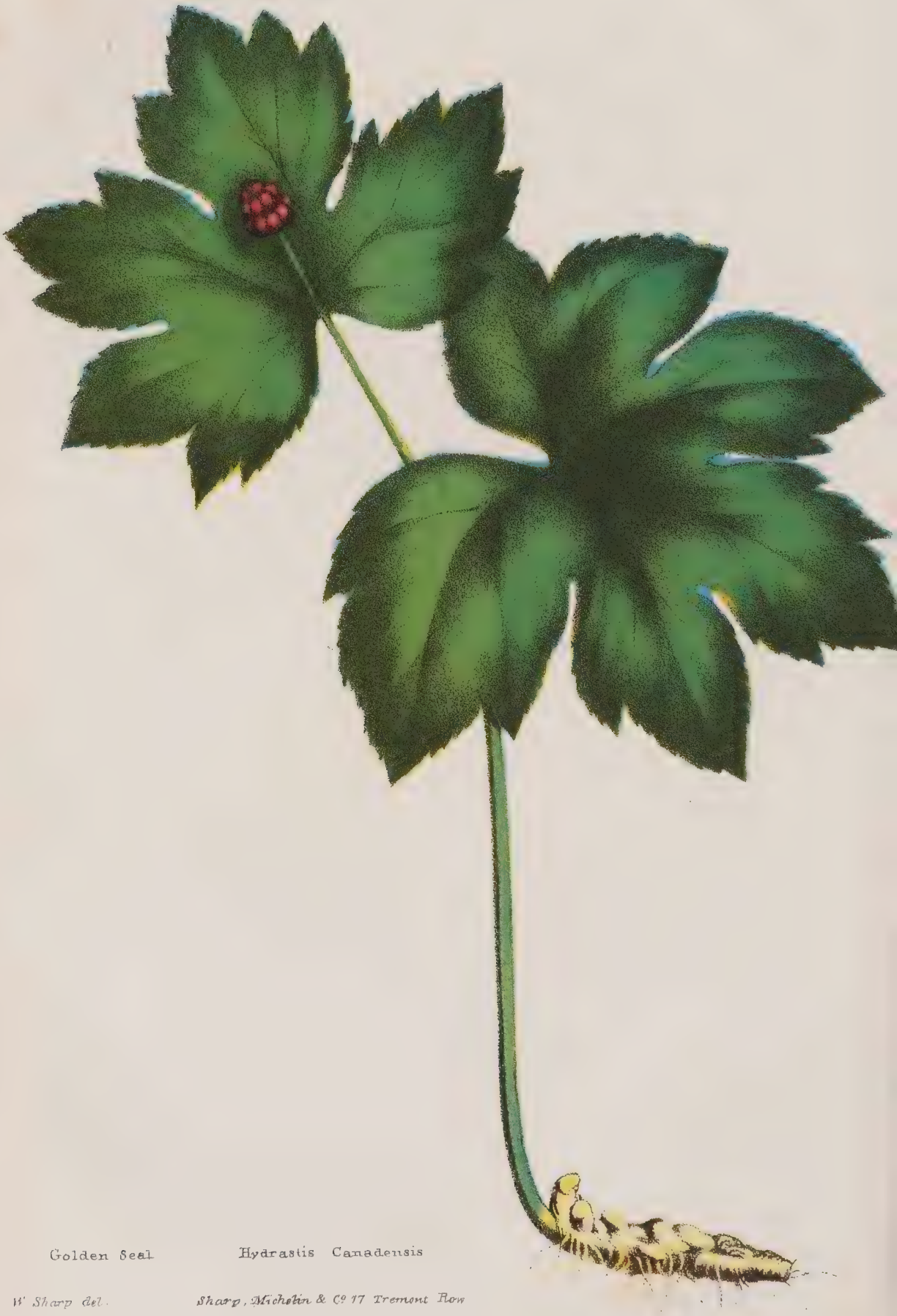
893. Poplar bark is one of the principal ingredients in the *spiced bitters*. The bark of the root possesses properties similar to that of the trunk, but being more difficult to obtain, it is very seldom used.

GOLDEN SEAL.

Hydrastis Canadensis—The Root.

894. The golden seal is distinguished by a variety of common names, as Ohio kercuma, orange root, tumeric root, yellow puccoon,* eye balm, and Indian paint. The root is one or two inches long, and rough or knotted, giving off a number of yellow fibres. The stem is round, somewhat hairy, and from six inches to a foot in height. It divides at the top into two footstalks, of unequal length, each of which is terminated by a rough leaf, consisting of a number of lobes, and edged with sharp, irregular teeth. The upper leaf is the smallest, and rarely has more than three or four lobes, while the lower leaf is frequently divided into six or

* The Indians call all roots "*puccoon*," which dye red, orange, or yellow.



Golden Seal Hydrastis Canadensis

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seven. The flower appears in May, but dies in a very short time. It is of a white, or pale rose color, and rises on a short footstalk from the base of the upper leaf. It is succeeded by a red berry, very much resembling a raspberry.

895. Golden seal is occasionally to be found in the New England States, but is very rare. Small quantities of it have been collected in Vermont, and Connecticut. I have never seen it in Massachusetts. It is most abundant westward of the Alleghany mountains, and is very common in Kentucky, Indiana, and Ohio. It grows in rich woodlands, deep valleys, and on the banks of streams. It is occasionally noticed in Pennsylvania, springing up at the base of hills, and generally on their northern side.

896. The root loses two thirds of its bulk in drying. It dyes a yellow color, and is used by the Indians to stain their baskets, and clothing. It is frequently adulterated with barberry, and a variety of worthless barks.

897. Properties and Uses. Golden seal has a pleasantly bitter, and somewhat pungent taste, and is highly esteemed throughout the United States, wherever it is known, as a tonic and laxative. It keeps the bowels moderately open, without acting as a purgative, or reducing the strength of the patient. It is an excellent medicine in dyspepsia, loss of appetite, general debility, and affections of the liver. The powder, mixed with an equal quantity of pulverized loaf sugar, and eaten dry, will often afford relief in faintness of the stomach, and languor or debility of the general system. The decoction is in much repute in the western states, as a wash in sore or inflamed eyes, and it is also used as a wash for sores. A level tea-spoonful of the powder, more or less, is given at a dose, and repeated according to circumstances. It should be steeped in hot water, and rendered palatable by the addition of sugar.

898. Golden seal enters into the composition of the *spiced bitters.*

BALMONY.

Chelone Glabra—The Herb.

899. This plant, variously called bitter herb, snake head, shell flower, and turtle bloom, is found near the borders of streams, and in thickets and meadows, where the ground is wet. It has a perennial, fibrous root, which sends up a number of erect, smooth, bluntly four cornered stems, from three to five feet high, and

occasionally branched near the top. The leaves are opposite, tapering, five or six inches long, sharply pointed, and edged with acute teeth. The flowers are white, tinged in some instances with a delicate shade of red. They are disposed in a cluster, as is seen in the drawing opposite the preceding page, and do not bloom until late in the autumn. They are remarkable for their resemblance to the head of a snake, and hence the familiar name of snake head.

900. The herb should be collected in clear, dry weather, and as soon as it is in bloom, as the leaves frequently become mildewed after that time. It should be dried in the sun, or in a warm chamber, or loft, and carefully guarded from a moist or damp atmosphere, or it will acquire a dark or black color.

901. PROPERTIES AND USES. This herb is exceedingly bitter, and has been long known in New England as a tonic and laxative. It is employed in costiveness, dyspepsia, loss of appetite, and general languor or debility. Given to children afflicted with worms, it will generally afford relief. It is a valuable medicine in disorders of the liver; and in jaundice, it tends to remove the yellow tinge from the skin and eyes. A level tea-spoonful of the powder, is the ordinary dose. Balmony, as well as poplar bark, and golden seal, is an ingredient of the *spiced bitters*.

MYRRH.

Myrrha—The Gum.

902. Gum myrrh is the juice of a small tree growing in Abyssinia and Arabia; it exudes spontaneously, and collects into masses on the bark. Sometimes it falls to the ground, and is buried in the dirt. The myrrh which reaches us from the East Indies, called *India myrrh*, is said to be procured in Abyssinia, while that imported from Turkey, and known as *Turkey myrrh*, is collected in Arabia. The latter is more free from impurities, and is generally of a better quality.

903. Good myrrh, when broken, exhibits a light brown color, and is somewhat transparent. It is fragrant to the smell, and pleasantly bitter and aromatic to the taste. When of an inferior quality, the taste and smell are rank and offensive.

904. The myrrh of a soft consistence, and very light color, is a recent exudation from the tree, and has not had time to acquire a brittle texture. It is unpleasant to the taste, and on that

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account is not employed in medicine, where a better article can be obtained.

905. Myrrh is partly dissolved by water, and partly by alcohol, but a mixture of the two, is the best adapted to extract the whole of its virtues. In order to reduce it to powder, families will find it convenient to be supplied with a portable spice mill, such as we have previously mentioned. (616.)

906. Properties and Uses. Myrrh is a very old remedy, and is well known as a stimulant, tonic, and antiseptic, with a tendency to act, as is supposed, upon the lungs and uterus. It is usefully employed in diminished appetite, obstruction of the menses, asthma, cough, sore mouth, spongy or unhealthy gums, offensive breath, worms, and a low or exhausted state of the system. Half a tea-spoonful of the powder, steeped in hot water, may be taken at a dose, or the medicine may be employed in the form of a tincture. The latter, says a writer on the subject, "is recommended internally for warming the habit, attenuating viscid juices, strengthening the solids, opening obstructions, particularly those of the uterine vessels, and resisting putrefaction." Injected into deep wounds, or applied to offensive sores, it will cleanse them, and gradually promote the healing process. Mixed with water, it makes an excellent gargle for the mouth, where the gums are unhealthy, or the teeth carious. A flannel wet with it, and applied to a weak back, will often afford relief. It is particularly valuable, also, as an addition to injections, in case of diarrhœa, or dysentery, and for this purpose, may be employed in the quantity of two or three tea-spoonfuls.

907. Half a tea-spoonful of the tincture, more or less, may be taken at a dose.

908. Myrrh is a component part of the rheumatic drops, which is a most valuable form of the medicine.

909. The alcoholic tincture of myrrh is rendered opaque or milky by the addition of water, but the myrrh is not precipitated.

PEACH TREE.

Amygdalus Persica—The Meats or Kernels.

910. This tree is said to have been brought originally from Persia, and is too well known to need a description. The dried fruit, stewed with sugar, is laxative, and very wholesome for invalids who are troubled with costiveness. The peach kernels

have a bitter and agreeable taste, and constitute a very valuable medicine. Made into a sirup, or cordial, with other appropriate articles, they improve the tone of the stomach and bowels, and invigorate the digestive powers. They are particularly serviceable in convalescence from dysentery. A tea, prepared by steeping the pounded kernels in hot water, and adding sugar to make it palatable, may be used as a substitute for the sirup, or cordial.

911. It has been intimated that peach kernels contain prussic acid, but this is not admitted by scientific men. Dr. Wood, professor of Materia Medica in the Pennsylvania University, is in the habit of stating in his lectures, that peach kernels, and the bark of the wild cherry tree, are devoid of prussic acid in their natural state, and that this product is the result of chemical action, during the process of distillation.

912. *Peach Jam.* Take ripe peaches, peel and remove the stones; put them into a preserving pan, and mash them over the fire until they are hot; rub them through a sieve, and to a pound of the pulp, add a pound of loaf sugar, and an ounce of well bruised peach kernels; simmer gently for ten or fifteen minutes, stirring all the time, and removing the scum which rises to the surface. This, dissolved in water, makes a pleasant and wholesome drink for the sick.

UNICORN.

Helonias Dioicia—The Root.*

913. This plant is known by various names, as false unicorn, blazing star, devil's bit, and drooping starwort. It has a tapering, fibrous root, which is an inch and a quarter long, and not quite so thick as the little finger. It is very hard, transversely wrinkled, and mostly abrupt at the end, appearing as though it had been bitten off. The root leaves continue green all winter, and spread upon the ground in the form of a star. They are four or five inches long, narrow at the base, and terminated by a somewhat tapering point. The stem of the male plant is a foot or more in height, and terminates in a long, drooping, and very graceful spike of flowers, which are of a dirty white color. They remain in bloom from June to July. The stem of the female plant is erect,

* The *veratrum luteum* of Linnæus and Nuttall.

Unicorn. Helonias Dioica

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much taller than the other, and is furnished with flowers of a larger size.

914. The unicorn is abundant in some of the Western States, and is found also in Pennsylvania, New York, and Connecticut. It grows in woodlands and meadows, delighting in a moist situation.

915. The *aletris farinosa* or *star grass*, which has also received the name of *unicorn*, is often mistaken for this plant. It is similar in growth and appearance, but may be identified by its sharply pointed leaves, and brittle, scaly looking root. It possesses tonic properties, but is also a narcotic, and purgative, which renders its use objectionable, and sometimes hazardous. Rafinesque, in speaking of it, says—"It is a powerful and dangerous substance, drastic even in small doses, and in larger ones, it causes vertigo, and bloody stools." He also observes that the Indians attribute to it the power of producing abortion. Notwithstanding the dangerous properties of the plant, it has been introduced by Dr. Hersey into his work on midwifery, as the *helonias dioicia* or *unicorn*, which is now so extensively used throughout the United States.

916. Properties and Uses. The root of the unicorn has a bitter, but not unpleasant taste, and is a very excellent tonic. It is said that the Indian women employ it, under an impression that it will prevent miscarriages. It is beneficial in stomach complaints, loss of appetite, and the various maladies which accrue from a derangement of the digestive organs. It is chiefly employed, however, as an ingredient in Dr. Thomson's *woman's friend*, which he recommends to be used both before and after delivery, and also in weakness or debility of the organs concerned in the process of labor. I prescribed the unicorn recently, in a case of uterine difficulty, recommending half a tea-spoonful of the powder to be taken three times a day, in warm water, sweetened, and by the expiration of a week, the patient was very much relieved, but I was disposed to attribute the favorable change to the influence of the medicine as a tonic, rather than to any specific action which it had upon the uterine organs. The appetite was very much improved, the food better digested than for a long time previously, and of course, it was natural to infer that the local malady would yield, in some measure, to the salutary impression which had been made upon the general system. The doctrine of specifics is now becoming unpopular, even with the medical faculty, and reformers in the healing art, should be the last to give it countenance or support.

917. The solid root of the unicorn, retained in the mouth, and the substance swallowed as it becomes dissolved, is beneficial in coughs. Sometimes, however, it renders the mouth sore by mechanical irritation, and then the use of it should be discontinued.

NERVINES.

918. Nervines are medicines which soothe and quiet the nerves, when they are in an excited or irritable state, without impairing or blunting their sensibility. There is scarcely a disease in which they may not be employed with advantage. In spasmodic pains of the stomach and bowels, gravelly complaints, strangury, hysteria, restlessness, asthma, tenesmus, inability to sleep, and nervous pains and affections of every description, they are particularly useful.

919. Nervines are essentially different in their action from narcotics, for the latter, such as opium, morphia, stramonium, belladonna, and prussic acid, impair the functions of the brain, as well as of the whole nervous system, and the patient becomes stupid, or insensible, sinking into a dull, heavy sleep. At length he awakes, if the poison does not prove fatal, and finds himself afflicted with headach, tremors, nausea, a parched tongue, and a hot and dry skin. Nervines, however, do not occasion any of these distressing symptoms, but compose or soothe the nerves, without destroying their sensibility, or rendering the patient dull, or stupid.

920. Nervines may be added with benefit to injections, particularly in diarrhœa, dysentery, piles, and nervous diseases.

SCULLCAP.

Scutellaria Lateriflora—The Herb.

921. This plant is generally known as the *blue scullcap*, and is also called side-flowering scullcap, mad-dog weed, and hood wort. It grows in damp places, and along streams. Meadows which are overflowed with water in the spring, and become dry during the summer, often produce it abundantly.

922. Scullcap has a small, fibrous root, and an erect, sharply four cornered stem, which varies from ten inches to two feet in height. It is branched similar to lobelia inflata, the lower branches being the longest, but none of them reaching above the top of the stem. The leaves are rounding, or heart-shaped at the base,

Scullcap. Scutellaria Lateriflora

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acutely pointed, and divided along the margins into teeth of irregular sizes. The flowers are blue, making their appearance in July, and are arranged in pairs on the under sides of the branches. They are succeeded by small seed vessels, of a light green color, and somewhat in the shape of a hood. They open laterally by a valve, each one containing four seeds.

923. Properties and Uses. Scullcap has a prominently bitter taste, and is the best nervine I ever employed; it is also tonic and antispasmodic. My attention was first called to this plant by a distinguished merchant in Boston, who told me that he had been subject to great nervous excitement, and severe tremors, so that he could not hold a pen to write. He was recommended to use a tea of scullcap, and accordingly, on retiring to bed, he ordered a pint of the tea to be prepared, the whole of which he drank during the night, and when the morning came, greatly to his astonishment, he found himself perfectly calm, and able to write without difficulty. He continued to use the tea after that period, when occasion required, with uniformly good results.

924. I recollect a gentleman with delirium tremens, to whom a course of medicine was administered, and though the disease was arrested at the time, the symptoms returned in the course of twelve hours, and the patient became as delirious as ever. I directed the use of scullcap tea, which he drank freely, and in a short time, was rendered quiet and comfortable, and sunk into a calm repose.

925. Scullcap is particularly useful in St. Vitus's dance, convulsions, locked jaw, tremors, ague and fever, tic douloureux, and all nervous affections. It may be given with advantage to children, whose health is impaired from the effects of teething. I generally employ it in a course of medicine, instead of the lady's slipper, and have found it of great value after a course, where the patient was faint or languid. Besides its other good effects, it has a tendency to keep the skin moist.

926. The warm infusion may be drank freely through the day, or a heaped tea-spoonful of the powdered leaves, with rather more than an equal quantity of sugar, steeped in a tea-cupful of boiling water, may be taken at a dose, and repeated as often as the symptoms require.

927. Scullcap, says Rafinesque, has lately become famous as a cure in hydrophobia. This property, he continues, was discovered by Dr. Vandesveer, about 1772, who used it with the utmost success, and until 1815, when he died, he is said to have prevented four hundred persons, and one thousand cattle, from be-

coming hydrophobic, after they were bitten by rabid animals. His son is stated to have relieved or cured forty persons, in three years, in the States of New York and New Jersey, by the use of this medicine. What reliance is to be placed in these statements, I am not prepared to say, but from the well known effects of scullcap on the nervous system, I should be disposed to think favorably of it as a remedy even in hydrophobia.

928. My friend, Dr. A. C. Logan, to whom I wrote on the subject of scullcap, informs me that he has been in the habit of employing the scutellaria hyssopifolia, by some considered a variety of the scutellaria integrifolia, and that he can say with confidence, it is much more powerful than the scutellaria lateriflora or blue scullcap. Dr. L. further states in his letter, that he has made extensive use of the plant in question, as a nervine, and that he has never been disappointed in its effects.

LADY'S SLIPPER.

Cypripedium—Four Species—The Roots.

929. *Red or Purple Lady's Slipper—Cypripedium humile.** This species of the lady's slipper is more common than either of the others, and is variously called low lady's slipper, dwarf umbil, American valerian, nervine, Noah's ark, and moccasin flower. The latter name was given to it by the Indians, who employ it in the decoration of their hair. It grows in open woods, particularly where the pine tree prevails, and not unfrequently in shady swamps. It is tolerably frequent in some parts of Massachusetts. Maine also yields it abundantly. It was formerly very plenty in the woods of New Jersey, but in an excursion there, about two years ago, I found that it had almost entirely disappeared. It is not confined to particular states, but is scattered over the Union from Maine to Louisiana, extending west to Detroit, and the North Western Lakes. It is collected annually in this country, and sent to England, where the gardeners pay a high price for it as an ornamental plant. During my travels in England, I was informed by them, that it seldom continued to thrive more than two or three years, after its removal from the United States. It should be transplanted when in bloom, which is in May or June, according to the season or locality, as it will not flourish with any degree of certainty, at any other period.

* The *C. acaule* of the older botanists.

Purple Lady's Slipper, Cypripedium Humile.

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930. The root consists of a number of long, and yellowish, or blackish colored fibres, which diverge horizontally from a common centre. The leaves are radical—that is, they proceed directly from the root, and never exceed two in number. They are opposite, tapering, palish green, covered with a fine down, and supplied with nerves, which extend from the base to the point. The flower is large, inflated, pendulous, of a light purple, streaked with veins of a darker hue, and supported at the top of a naked stem, which varies from six to eighteen inches in height. The seed vessel is an inch and a half long, and opens in September by three valves, disclosing a multitude of minute seeds, resembling sawdust.

931. *Yellow Lady's Slipper—Cypripedium Parviflorum or Pubescens.** This plant grows in similar localities with the former, but generally prefers a moist or wet soil. It is called yellow umbil, bleeding heart, and Indian shoe. The root is horizontal, knotty, fibrous, and matted together. The stem is twelve or eighteen inches high, and supports from three to seven alternate, clasping leaves, similar in appearance to those already described. The flowers are yellow, inflated, handsome, and bloom in May, or June. They are supported at the top of the stem, and vary from one to three. The leaves and stem are generally covered with a thick down, but in some instances they are nearly smooth.

932. This plant is not so abundant as the *purple lady's slipper*, but has an equally wide geographical range. It abounds in various parts of Maine, New Hampshire, Vermont, Connecticut, New York, and the western prairies. According to Barton, it is rare in the middle states, but becomes more frequent toward the West. Attempts to cultivate it, do not generally prove successful.

933. *White Lady's Slipper—Cypripedium Candidum.* The white lady's slipper grows principally in swamps, and blooms in May or June. The flower is white and inflated. In other respects, the plant resembles the yellow lady's slipper. The roots are fibrous, and form large clusters or beds.

934. *Gay or Tall Lady's Slipper—Cypripedium Spectabile.*† This plant grows in woods and swamps, and is comparatively rare. It is about two feet high, with roots like those of

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* The *parviflorum* and *pubescens* are considered as distinct species by some botanists, and only as varieties by others.

† The *C. canadense* of Michaux.

the white lady's slipper. The stem and leaves are hairy. The latter are tapering, pointed, narrow at the base, and almost exactly resemble those of the hellebore or poke root. The flowers are nodding, inflated, and variegated with stripes of purple and white. They bloom in June, or July.

935. The roots of these plants are nearly similar in virtues. Those of the purple and yellow lady's slipper, however, are the most active and efficient. They have a peculiar, slightly bitter, and rather nauseous taste. The roots should be procured in the spring, or autumn, cleansed from dirt, and carefully dried. Collected in the summer, they lose two thirds of their substance in drying. After they are ground, they should be preserved in covered boxes, or barrels, to prevent any deterioration of their strength.

936. PROPERTIES AND USES. The lady's slipper is a very good nervine, and as it possesses no narcotic properties, may be used freely without any apprehension of danger. I do not consider it so valuable a medicine as the scullcap, but it nevertheless makes a very good substitute. Dr. Thomson says, "he has made great use of it, and in hysterical symptoms, and all nervous diseases, he has always found it to produce the most beneficial effects." It is considered an excellent remedy in nervous headach, epilepsy, tremors, restlessness, and low fevers, having the effect to quiet the nerves, allay pain, and promote sleep.

937. The powder may be taken in the dose of half a teaspoonful, steeped in a tea-cupful of hot water, sweetened, or it may be added to a tea of composition, or spiced bitters, the latter of which is preferable. The fibres of the lady's slipper, and cinnamon, which are left after these articles have been ground, and sifted, make a very pleasant tea for weak or nervous people, and may be given advantageously to children, with slight bowel complaints.

938. Boiling impairs the strength of the lady's slipper.

GINSENG.

Panax Quinquefolium—The Root.

939. The ginseng is scattered over the hilly regions of the Northern, Middle, and Western States, delighting chiefly in deep, rich woodlands. The root is about the thickness of the little finger, four or five inches long, frequently forked, transversely

wrinkled, and terminated by several slender fibres. The stem is smooth, round, and one or two feet high, divided at the top into three leafstalks, each of which contains from three to five, and sometimes seven leaves. These are narrowest at the base, from two to four inches in length, acutely pointed, smooth on both sides, and bordered with teeth, which enlarge toward the end. The flowers are small, white, and arranged in a little cluster, which rises from the centre of the leafstalks. They make their appearance in May or June, and are succeeded by a number of scarlet berries.

940. This plant is said to correspond with the ginseng of Chinese Tartary, which the inhabitants of that country formerly held in such high repute. It sold among them at one time for twice its weight in silver. Their eminent physicians wrote volumes upon its virtues, and no medicine was thought to be of any value unless it contained a portion of ginseng. Indeed, they regarded it as a remedy for all diseases; and among the remarkable names which they bestowed upon it, was one, signifying, *the plant which gives immortality.* The wonderful virtues ascribed to it, attracted the attention of a Jesuit missionary in China, who subsequently discovered the plant, in his travels through Canada. Large quantities of it were immediately collected and sent to China, where, from the scarcity of the article in that country, it commanded an exorbitant price. People in the United States also engaged in the enterprise, and it is said that the shipments of the root from Boston, collected on the hills of Vermont and New Hampshire, laid the foundation of many a splendid fortune in New England. The medicine, however, from some cause or other, finally became unpopular, and did not even pay the cost and duties of exportation.

941. Properties and Uses. The ginseng, although undoubtedly overrated by the Chinese and Tartars, possesses some very excellent properties. It is a pleasant bitter, and manifests on being chewed for some time, a sweetish, and slightly aromatic taste, resembling that of liquorice. It strengthens a weak stomach, promotes appetite, and gives tone and vigor to the whole system. It may also be used to advantage in nervous affections. Many persons are in the habit of chewing it as a substitute for tobacco, and to give them an appetite. The more wealthy portion of the Chinese and Tartars, use an infusion of the leaves as a common drink, instead of tea. The leaves of the American ginseng are also used in Kentucky and Virginia for a similar purpose. A tea-spoonful of the powdered root may be taken at a dose. It is usually administered, however, in the form of tea, which may be

prepared by slicing the roots, and boiling them in water until the requisite degree of strength is obtained, adding sugar to the liquid to make it palatable. A tea-cupful of this may be taken several times a day, either as a nervine or tonic.

PURGATIVES OR CATHARTICS.

942. With the exception of calomel and the lancet, there are no agents employed by medical men, which do more injury to the human system than purgatives. Nevertheless, they enjoy an almost unbounded popularity, and are considered indispensable in the treatment of disease. Their use is the more objectionable, because, where they do not prove suddenly fatal, they gradually undermine the vital powers, and ultimately destroy the patient, while neither he, nor his physician, suspects the cause of the difficulty.

943. It is estimated by medical writers, that a brisk cathartic will evacuate a pint of the serum or watery portion of the blood. Admitting the truth of this estimate, and no one, it is presumed, will call it in question, we need no other proof that cathartics are emphatically a source of depletion, and cannot be employed in medical practice, with any more consistency than the lancet. If we discard the one, we must necessarily discard the other, because they both operate upon the same principle. It is said, however, that cathartics merely evacuate the serum of the blood, which is incapable of nourishing the body, while blood-letting causes each of the constituent parts of the vital fluid to be removed; and hence the doctrine, or I would rather say, the hypothesis, that cathartics may be employed with comparative impunity, while blood-letting is productive of the most serious consequences. For my own part, I consider blood-letting less pernicious, as a means of depletion, than cathartics, because the latter, besides diminishing the quantity of blood in the system, irritate the intestinal canal throughout its whole extent, and thereby lay the foundation, in many instances, of an obstinate, or perhaps incurable form of disease. Broussais, the well known French physiologist, acting upon this hint, prohibited purgatives in fevers, and gave his patients gum water, or some simple mucilaginous fluid, which could do no harm. He says that an *acute* inflammation of the mucous membrane of the stomach and bowels, is often rendered *chronic* by the use of saline purgatives, which only mask the disease; and he attributes a similar effect to calomel and the neutral

salts, which allay the malady by keeping up a diarrhœa, the termination of which is in emaciation and dropsy.*

944. Dr. Eberle, in his remarks on the treatment of indigestion, accompanied with inflammation of the stomach, says, "Some writers recommend cathartics in this as in the milder varieties of the disease; but their tendency to *irritate* the tender and inflamed mucous membrane of the stomach and intestines, renders them, I think, decidedly objectionable. Slight relief will, it is true, usually follow the operation of a purgative, but this relief is always but temporary, and is very often succeeded by an *aggravation* of the *distress* and *tenderness* of the stomach."†

945. Again, says Dr. Eberle, "Nothing is more common than the repeated use of active purgatives in diarrhœa. An individual becomes affected with looseness of the bowels. If it does not soon cease spontaneously, he takes a purge. The bowel complaint, however, continues, and convinces him that there is still something left which must be removed. To make himself sure of his object, he takes a more active dose; but the pains and discharges instead of being mitigated, acquire greater violence. Astonished at the obstinacy with which the offending matter sticks to the bowels, he determines to rid himself of the cause of his complaint, and swallows a double dose of the most active cathartic. He now begins to experience tenderness in the abdomen; the pains and diarrhœal discharges continue; in short, he has *developed inflammation*, which the most judicious management may not be capable of removing."†

946. Dr. Withering, a physician of the old school, prohibited purgatives in scarlet fever, on account of their tendency to irritate the bowels. He believed that they caused the "matter of contagion" to be "diffused along the course of the intestinal canal."‡ Dr. Blackburne, in his treatise on scarlet fever, remarks, that "so great was Dr. Withering's fear of purging, that he suffered one of his patients to remain costive *eight days*."‡ We have the most undoubted testimony, therefore, that purgatives *irritate* the bowels, and this should be a sufficient argument against their use. What would be thought of a physician, if he were to direct one of his patients to apply an ointment to the skin, which would irritate it from head to foot, and yet this would be no more irrational, and perhaps far less injurious, than to administer a purgative, which would irritate that much more delicate tissue, the mucous mem-

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* Broussais's Pathology, p. 519.

† Practice of Medicine, 4th edition, vol. ii. pp. 290, 297.

‡ Good's Study, 6th American edition, vol i. p. 600.

brane of the stomach and bowels, with which every other part of the body so strongly sympathizes.

947. Professor Hamilton of Edinburgh, although he wrote a book in favor of purgatives, and imagined that he could cure almost every form of disease by their administration, very frankly observes, that they "undoubtedly debilitate the body, by causing a flow of fluids greater than usual, into the cavity of the intestinal canal."* In other words, he wishes to convey the idea, that they destroy the equilibrium of the circulation, and this is no doubt one of the principal reasons why they are so mischievous in their effects. Dr. Hamilton also observes, that purgatives probably weaken the body "by hurrying off the chyle, and precluding its passage into the system." This idea was originally suggested, if I mistake not, by Darwin, and is worthy of consideration. The chyle, after it is formed in the intestines, is taken up by the absorbent vessels, denominated *lacteals*, and carried into the circulation for the nourishment of the body, but if the bowels be irritated by cathartics, before it reaches its place of destination, it flows back into the intestinal canal, in common with the serum of the blood, and is finally evacuated by stool. Here, then, is an unfailing source of debility, for the chyle is the material of which the blood is formed, and in proportion as it is withdrawn from the body by purgatives, so will the patient sink into a state of feebleness, or exhaustion.

948. I have expressed the opinion, that blood-letting is less injurious than purgatives, and this notion seems to have been entertained by the celebrated Cullen. "In those cases of fever," says he, "in which a dangerous state of debility is likely to occur, purging is to be employed with a great deal of caution; and this caution is more difficult to be observed than in the case of blood-letting."†

949. Purgatives do not act in harmony with the laws of the human system, and therefore are pernicious. Taken frequently, they impair digestion, and give rise to permanent disorder. "The tongue of the most healthy individual," says the author of Medical and Surgical Observations, "will become foul, and he will lose his appetite, if he take neutral purgative salts, for several days in succession."‡

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* Hamilton on Purgatives, 5th Edinburgh edition, 1815.

† Cullen's First Lines of the Practice of Physic, by Dr. Rush.

‡ Eberle's Practice, 4th edition, vol. i. p. 140.

950. Griffith Hughs, in his Natural History of Barbadoes, speaking of a severe affection of the bowels peculiar to that climate, says, "The method of cure adopted at one time, was to purge the patients, but the unhappy creatures were subject to lose the use of their limbs by this practice." In 1700, the physicians changed their mode of treatment, and as late as 1750, when Mr. Hughs published his work, they had not again returned to the use of purgatives.

951. Purgatives are frequently resorted to in costiveness, but although they afford relief for the time being, they rarely fail to enhance the difficulty. Dr. Marshall Hall says, "The habitual use of active cathartics, although attended with temporary relief, seldom fails to bring on or aggravate a permanent state of costiveness."*

952. Mackintosh, in his remarks on the treatment of gout, says, "The bowels should form a chief object of attention; they must not be allowed to be constipated; but the opposite extreme is fully, if not more injurious. Many individuals are injured by the pernicious habit of taking some strong physic now and then; but it will be invariably observed, that the bowels become afterwards more torpid."†

953. Professor Bigelow of Boston, remarked to his class, that "Purgatives lose their power by habitual use, and if taken daily or periodically for any length of time, cannot be dispensed with, and three, four, or five times the dose is required to operate. It is a ruinous practice, and the patient can only rid himself of this slavery, by attention to diet, plenty of exercise, and other appropriate means." The lecturer further observed, that "if relief cannot be obtained by dieting, it is better to use injections, ininstead of cathartics."

954. Formerly, I was of a very costive habit myself, and made use of bitter root, and other cathartics, to no purpose. As soon as the purging ceased, the bowels became as torpid as ever. I then resorted to courses of medicine, which afforded temporary relief, but did not effect a permanent cure. Ultimately, I was induced to change my mode of living, and quitted the use of tea, coffee, fat meat, butter, and all oily or greasy substances, and subsisted principally on fruits and vegetables, eating the unbolted wheat bread, instead of that manufactured from superfine flour, and from that period to the present, which is more than two years, I have been free from the complaint. In addition to the regulated

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* Hall's Practice of Medicine, edited by Drs. Bigelow and Holmes, p. 87.

† Practice of Physic, 2d American edition, vol. ii. p. 457.

diet, I also took plenty of exercise, and paid particular attention to the state of the skin, employing the shower bath every morning in the summer, and the hand bath in the winter, following them by a brisk use of the flesh brush, or a coarse towel, to produce a warm glow of the skin. I did not wholly abstain from lean meat, but ate it very sparingly, finding that it had a tendency to render the bowels costive, especially when I had not the advantage of free exercise in the open air. I have been in the habit of recommending the above treatment in cases of costiveness, and have never known it to fail in producing the desired results.

955. Purgatives may be taken from day to day, in small doses, so as to procure regular evacuations, and yet the bowels continue in a loaded state. A striking instance of the kind came under my observation several years ago in Philadelphia. The patient was a Dr. Harlan of that city, a graduate of the Pennsylvania University, and a practitioner of about three years' standing, who had been much reduced by a disease of long continuance, and who had taken calomel, and other drugs of a similar nature, without receiving any benefit. I met him one day in the street, and besought him to make a trial of the vegetable remedies. He thought favorably of the proposition, but said he had just commenced a new plan of treatment, which he was anxious to test. This consisted of the administration of small doses of a mild cathartic, which was intended to keep the bowels gently open, without the risk of purging. He promised me, however, if he was no better at the end of a fortnight, that he would make a trial of the remedies I had proposed. When the time expired, I called at his residence, and found him in bed, much more indisposed than when I had last seen him. He told me his bowels had been daily evacuated, but nevertheless, I prepared an injection, in the usual form, which was administered, and greatly to the surprise of the patient, it caused a large quantity of hardened feces or *scybala*, to borrow a term from medical books, which looked as though they had been impacted in the bowels for weeks, or even months. The injection was repeated, with a similar result, and the patient readily acknowledged, that a daily evacuation by stool, was no evidence that the bowels were free from a morbid accumulation of feces.

956. Many cases, similar to the above, are recorded in medical books. Professor Hamilton, in his work on Purgatives, relates the particulars of a patient who entered the Royal Infirmary, Edinburgh, on the 10th of May, and died on the 17th of May, taking, in the interval, frequent cathartic doses, as senna, magnesia, calomel, jalap, and aloes; and although he had frequent evacuations, it was found, on opening the abdomen, that the lower

portion of the small intestines, contained "a few hard *scybala*, of a dirty green color, and very fetid; and in the sigmoid flexure of the colon, (see Fig. 3, page 20) and the whole of the rectum, a large quantity of these scybala had also collected, resembling, in every respect, those in the small intestines." Such is the language of Professor Hamilton; and I ask, if purgatives are capable of freeing the bowels from obstructions, why they did not accomplish it in the above instance, for they were repeated sufficiently often, and some of them were of the most drastic kind? It is said of Dr. Hamilton, that, although he purged his patients daily, for months, the hardened feces were frequently found, in post mortem examinations, adhering to the inner coat of the intestines, while the purgatives had escaped by working a little channel through this indurated mass.

957. A writer in the British Foreign Medical Review, remarks, "We were lately assured by a lady, to whom we were called in the country, and where we had not an opportunity of seeing the evacuations, that her bowels were in perfectly good order, and acted daily; when, on examining the abdomen, to remove our skepticism on that point, we found it distended with feces. On ordering a succession of active purgatives, and injections, for their removal, the patient remonstrated, and stated that, as she had repeatedly taken salts of late, which operated freely, it would weaken her too much to give her more, and that she could not require them. We of course insisted; and when, to her great surprise and relief, an enormous quantity of solid feces made their appearance, she then said it was *many weeks* since she had passed a natural evacuation *of that kind;* but not knowing that liquid excretions were insufficient, she had answered our question as she did." Whether the *purgatives* or the *injections* were mainly instrumental in evacuating the bowels, the writer does not state, but it is probable, from what we have learned of Professor Hamilton's practice, that the former had but little agency in effecting the desired result.

958. A collection of feces, constituting an obstruction, rarely takes place in the small intestines. The innutritious portion of the food, and the other matters blended with it, passes through the small intestines in a liquid form, and with comparative rapidity, not acquiring the character or consistence of feces, till it has reached the lower or large intestines. Here, according to competent authority, the feces pass onward to the sigmoid flexure, (see Fig. 3, page 20) where they accumulate previous to being voided by stool; and as this portion of the intestinal track is but a short distance from the anus or fundament, it is always

within the reach of an injection. In the treatment of disease, therefore, in which it is necessary to evacuate the bowels, shall we employ an injection, which will bring away the accumulated feces at *once*, or shall we administer a purgative which may not operate for several hours, and irritate the intestinal canal throughout its whole extent? An injection is prompt in its action, as well as safe and efficacious, but a purgative is often slow in its operation, and is frequently productive of serious consequences. Which, then, shall we choose? If the evacuation of the bowels is the only object to be attained, an injection will answer every purpose, but if we wish also to *deplete* the patient, we may as well employ a more speedy method, and resort to the lancet at once.

959. The use of purgatives for any length of time, will often give rise to black and fetid stools, especially in fevers of a low grade; and medical men generally consider this as certain evidence, that the purgatives should be continued. On this subject, the author of Medical and Surgical Observations, indulges in the following appropriate remarks. "There is one fault," he says, "which a physician sometimes commits in the treatment of bilious fevers, and that too, for the most part, when he *thinks he is doing right*. I allude to the too long continuation of purgative medicines. He is apt to think that the impurities have been long fixed in the bowels, and in order to cleanse his patient thoroughly, and to leave nothing noxious behind, persists in the use of purgatives. What is worse, any appearance of these cases would seem to justify his suspicion of the existence of fixed impurities of long standing in the bowels, and confirms him in his design of at once making a clean house. The longer he continues to give his purgatives, the *fouler does the tongue become*, and the more distressed the stomach; the symptoms, in short, of intestinal impurities become more and more conspicuous, while he continues to dilute and to evacuate, without reflecting or knowing that he is himself the cause of all the noxious matter in the intestines, and *constantly irritating* them with his purgatives, and keeping up an aflux of fluids to the internal or mucous coat."*

960. Professor Dewees of Philadelphia, incredible as it may appear, has fallen into the error which has been commented upon with so much severity in the above paragraph; for he tells us, in his Practice of Physic, after ridiculing what he terms the popular prejudice which sometimes exists against purging, that he has known large and fetid evacuations to take place after the purging process had been continued for a considerable time. Professor Chapman,

* Eberle's Practice of Medicine, 4th edition, vol. i. p. 139.

also, of the same city, coincides with his learned brother, and says, according to Dr. Dunglison, another professor in Philadelphia, that "in obstinate remittent and intermittent autumnal fevers, cathartics should be continued until *dark*, *tarry*, *fetid* stools are induced. This dark appearance he conceives to be a glutinous matter, which adheres to the intestines, and requires cathartics for its removal; but it appears by no means clear," continues Dr. Dunglison, "that it may not be, in part, the effect of the repeated employment of cathartics deteriorating the intestinal secretions."*

961. I may here remark, that Dr. Jackson of the Pennsylvania University, concurs with Dr. Dunglison in opinion, and says that black and fetid stools rarely occur in fevers, unless the patient has been purged a considerable time.

962. Dr. Benjamin Bell, speaking of the action of mercury on the human system, observes, "Local pains may be for a time suspended, by irritation of a different kind being excited either in the contiguous or some more distant parts of the body; but we know of no constitutional disease, that has hitherto been cured by such means."† It is upon this principle that temporary relief is afforded by purgatives, in particular forms of disease, as inflammation of the liver, kidneys, or bladder. The purgatives excite an irritation in the stomach and bowels, which is followed by a cessation of the local pains, but these are extremely liable to return. Dr. Comfort of Philadelphia, says, "I have known active cathartics to afford relief in rheumatic pains of long standing, by irritating the intestinal canal, and weakening the circulation in the part affected; but as soon as the irritation in the bowels subsided, the pains returned with increased violence, and the patient was in a worse condition than before."

963. There is a popular belief, that cathartics are sometimes necessary to purge away the bile, and if an unusual quantity of it appears in the alvine discharges, the patient expresses a great deal of satisfaction, believing that he was extremely bilious, but he does not consider, that this increased flow of bile may have been caused by the operation of the cathartic. Dr. Dunglison has made some very appropriate remarks on this subject, which I shall quote at length. "The alvine discharges," he says, "may assume an unhealthy bilious character, under the operation of a cathartic, owing solely to the irritation it induces in the various secretory organs of the digestive apparatus. If we administer calomel as a cathartic,

* Dunglison's Therapeutics, p. 250.

† Treatise on Gonorrhœa Virulenta, &c.

it irritates the lining membrane of the duodenum, (commencement of the small intestines) and this irritation extends along the biliary ducts to the liver, the secretion from which is augmented. * * * Hence we can understand, that after the operation of calomel, or of any purgative, whose action is chiefly exerted on the upper portion of the intestines, there may be manifest appearances of bile in the evacuations, without our being justified in inferring that the individual is bilious; and, that the increased flow of bile is occasioned by the purgative, may be proved by discontinuing its use for some days, when the signs of bile in the evacuations will cease, and be *reproduced, when its use is resumed.*"*

964. Another prominent objection to the use of purgatives is, that their action cannot, in all cases, be controlled, even though they should be given in minute doses with a view only to their laxative effects. When it is least expected they may excite purging, and hurry the patient to the grave. Many cases of this kind have come under my observation. I recently attended a child with the smallpox, to whom I administered a course of medicine, and left it in a very comfortable state, giving directions for its further treatment. I called the next day, and to my surprise, found it rapidly sinking, and with all my exertions, could not restore it. Upon enquiry of its parents, as to the cause of this unfavorable change, they informed me, to use their own language, that they had given it a "little physic to move its bowels," and as soon as the physic began to operate, the child became immediately worse. I recollect a gentleman who was recovering from a severe attack of typhus fever, and not content with the treatment he had received, concluded to take a dose of bitter root, to "move his bowels *gently*," but instead of the "gentle" operation which he anticipated, purging was induced, followed by a speedy relapse, and in a short time he was a corpse. I might mention a number of similar cases, but the above, I presume, will suffice. The medical faculty themselves, are fully aware of the fatal tendency of purgatives under certain circumstances, and it would be well if some of those who assume to be *reformers* in the healing art, would consult their works on this subject. Dr. Dewees, in his remarks on the treatment of fevers, observes, "Purgatives should not be used so as to interfere with the night's rest of the patient; nor should they be used so that they shall interfere with the 'sweating stage of the disease.'" Again, he says—"They should not be given in the decline of fevers, where the patient is rapidly convalescing, lest they produce a relapse. * * *

* General Therapeutics, pp. 234–5.

Nor must we use them when the patient is much exhausted by colliquative diarrhœa; nor near the decline of a febrile paroxysm."* Here are golden rules for the administration of purgatives, which should be kept prominently in view by those who employ this class of agents. With regard to some of the reformed practitioners, however, who are clamorous for the use of purgatives, I have observed, that they do not specify the circumstances under which they may be employed without manifest injury to the patient, but content themselves by saying, that there are "particular cases in which purgatives are indispensable," and with this general view of the subject, they dismiss it, without further investigation; while perhaps, the very cases which they would cite, as requiring the use of purgatives, are those in which a purgative would prove almost inevitably fatal.

965. Medical men, though constantly in the habit of using cathartics, are aware that in many conditions of the system, they exercise a baneful and destructive influence. "Purging immediately before a paroxysm of the gout," says Cullen, "will be always employed with the hazard of developing it the more speedily."†

966. "In two instances of acute inflammation of the bowels, reported by Dr. Abercrombie," says Professor Eberle, "a relapse was the consequence of the use of drastic purgatives."‡ This writer, speaking of diabetes or an excessive flow of urine, also observes, "Prout asserts, that he has known the most serious consequences brought on by a small dose of calomel, which by inducing diarrhœa, and consequent debility, aggravated all the symptoms."‡

967. Dr. Benjamin Bell remarks, "In certain stages of gonorrhœa, a strong purgative never fails to increase the pain; to excite a more frequent desire to pass water, and to increase the discharge; nay, I have known various instances of a return of all the symptoms of gonorrhœa, in consequence of the operation of a brisk purgative, long after the patient considered his cure as complete."§

968. Dr. Channing of Harvard University, said in one of his lectures, "I have been in the habit of giving women a purgative immediately after delivery, but have discontinued the practice, because it oftentimes produced inflammation of the bowels."

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* Dewees's Practice of Physic.

† First Lines of Physic.

‡ Eberle's Practice of Medicine, 4th edition, vol. i. p. 229, and vol. ii. p. 392.

§ Treatise on Gonorrhœa Virulenta, etc.

969. Dr. Ware of the same institution, in some remarks on the treatment to be pursued in inflammation of the external coat of the bowels, called *peritonitis*, said, "It is a question whether the benefit derived from purgatives is not more than counterbalanced by the irritation which they produce."

970. Were I prohibited from using injections, in the treatment of disease, I would rather the bowels should continue in a costive state until I could restore them to a healthy action by general treatment, than to solicit an evacuation by irritating or perhaps inflaming them with a cathartic. Costiveness is by no means so unfavorable a symptom as diarrhœa, and in many of the fevers, it will not be denied, that more danger is to be apprehended from the latter than the former. Dr. Nathan Smith of New England, was in the habit of remarking, that he never knew a case of typhus fever to terminate fatally when costiveness prevailed throughout the disease; but on the contrary, when diarrhœa was a symptom, the patients frequently died. It is very easy to obviate costiveness by the use of physic, but it is not so easy to counteract the debility and other unfavorable symptoms, which follow its administration. Some practitioners, however, who claim to be reformers, assert that purgatives in their hands are not productive of any evil, and if such be the fact, it is because they administer medicines to counteract their evil tendency. This, to say the least, is but a poor argument in favor of purgation, and by adopting a similar precaution, the lancet might be employed in many instances, with the same impunity.

971. Speaking of typhus fever, I am reminded that this is one of the diseases in which some of the reformed practitioners contend for the use of purgatives. I am constrained to say, however, so far as my experience has extended, that there is no malady in which cathartics are employed with greater risk to the patient; and I am satisfied, that every physician of enlightened views, and extensive practical knowledge, will sustain me in the assertion. The fact that typhus fever is frequently accompanied with an inflamed, or ulcerated state of certain glands of the small intestines, is a sufficient reason why they should not be employed; for under these circumstances, a very small dose of a cathartic will act upon the bowels, induce a copious diarrhœa, and very soon destroy the patient. Physicians of the old school, consider the chances of recovery much more uncertain in typhus fever, where diarrhœa takes the place of costiveness. Dr. Dunglison, in his General Therapeutics, remarks, "It has often fallen to my lot to witness the bad effects resulting from the administra-

tion of cathartics in cases of fever—of the typhoid kind especially —in which the powers of the system have been worn down by the irritation resulting from the specific action of the medicine, and the exhaustion caused by the repeated evacuations." Indeed, it appears to me, that purgatives are more dangerous in a low case of typhus fever than blood-letting itself; and if we wish to be consistent with the principles which we advocate, and promulgate a reform that will be as useful as it is enduring, we must discard depletion in all its forms, and employ those remedies only which act in harmony with the laws of the animal economy.

972. Nothing is more uncertain than the time required for the operation of a purgative. This may be two hours, or it may be twenty-four, according to circumstances. I have known patients to take cathartics for several days in succession, without any evacuation from the bowels. Admitting the efficacy of these agents, therefore, it will be seen how little they are to be depended upon in particular cases. In some diseases, a very large quantity of a purgative is required to produce the desired effect, while in others, a very small portion will suffice. Medical men say that children with dropsy of the brain cannot be purged with less than thirty or forty grains of jalap, whereas, under ordinary circumstances, ten or fifteen grains will be sufficient. In fevers generally, a cathartic requires to be given in increased doses, particularly if the brain is affected, but in typhus a very minute portion will suffice, for the reasons already assigned. (971.)

973. Colic or "stoppage of the bowels," as it is sometimes termed, is one of those diseases in which purgatives are regarded by many people as indispensable. The intestines, however, are in a state of spasm, being contracted to a small cord, and under these circumstances, the action of purgatives would be effectually resisted. The spasm should be overcome by the use of injections, the vapor bath, and the usual warming medicines, and then the bowels will return to a healthy condition; but if we employ cathartics, we may not only fail in relieving the patient, but incur the risk of adding to the violence of the disease. Professor Ware, in one of his lectures on the treatment of colic, said, "It is better that the bowels should remain costive a few days, than to persevere in the use of purgatives, for they occasion irritation along the whole intestinal canal."

974. The *ileus* or *iliac passion*, so called, is another form of disease which is known as *stoppage of the bowels*, and in which cathartics are thought to be particularly indicated. This malady is a species of colic which has its seat in the ilium or lower part

of the small intestines. It commences with a dull pain in the bowels, chilliness, and great irritability of the stomach. The intestine is in a state of spasmodic contraction, which closes or obliterates its cavity. Vomiting at length ensues, consisting at first of the contents of the stomach, and then of the fecal matter of the bowels. In the treatment of this distressing malady, we must employ the same remedies that we do in colic, for the indications of cure are the same; but I need not say that purgatives would be wholly useless, for they cannot operate while the intestinal canal is in a state of rigid spasm. Dr. Ware, from whom I have just quoted, says he has known more than one case of ileus in which the bowels resisted the action of purgatives, and the patient has been without an evacuation for ten or twelve days.

975. The assertion is frequently made by practitioners of the new school, who are not thorough in their reform, that there is a "*particular spot*" in the bowels which cannot be reached by the ordinary routine of treatment, and hence it is supposed that a cathartic is necessary. We are not told in what this particular difficulty consists, but it may be an inflammation in some part of the intestinal canal; and if so, it is impossible to effect a cure at once, whatever may be the plan of treatment, for some time is necessarily required for the inflammation to subside. Hence the idea that there is "a particular spot" which the medicines cannot reach. In some instances, however, a cathartic is given by way of experiment, and as soon as it begins to operate, the patient says he is relieved. Without any further reflection upon the subject, the cathartic is thought to be a judicious remedy, but it is not taken into the account, that it afforded relief only by irritating the mucous membrane of the bowels, and causing an extension of the inflammation along the intestinal canal. On the same principle, an inflammation of the lungs is sometimes relieved by the external application of a blister, but this, in the language of M. Louis, is only "superadding one inflammation to another;" (411) and the propriety of such treatment is not admitted by any substantial reformer in the healing art.

976. I do not condemn the use of cathartics from any love of theoretical speculation, but because I believe them to be as useless as they are pernicious. In acute diseases, in which it is necessary to make an immediate impression on the system, it is very easy to employ injections, and they are much more safe and efficacious than cathartics. On this point, I have the concurrent testimony of a number of respectable practitioners, who have employed them exclusively, to evacuate the bowels, for a long series of years.

977. One broad and important ground upon which I would object to the use of cathartics is, that they cannot be employed with safety by the people. A practitioner, who is well acquainted with symptoms, may frequently prescribe them with impunity, but the people, who do not know in what condition of the system they would be likely to prove injurious, or perhaps fatal, cannot administer them indiscriminately, without the risk, in many cases, of doing irreparable injury.

978. Injections have the effect, as I have said, to evacuate the large intestines; and in conjunction with these, laxatives may be employed to free the small intestines from any acrid matter which they may contain. We must be careful, however, to make a distinction between laxatives and purgatives. The latter are sometimes administered in small doses, under the name of laxatives, but as they are capable, under some circumstances, of purging violently, even in the minutest quantity, the term is not appropriately applied. Laxatives, therefore, are those medicines which keep the bowels gently open, without the risk of purging. Among the laxatives mentioned in this work, are golden seal, and the bark of the American aspen. The unbolted wheat bread is a laxative, but not a purgative. Cayenne is a most excellent laxative, and taken in the dose of half a tea-spoonful, more or less, two or three times a day, will have the effect to regulate the bowels, without diminishing the strength of the patient, or giving rise to copious or watery stools. It restores the natural peristaltic action of the bowels, and does not leave them in a weak or torpid condition, as is almost invariably the case with purgatives.

979. Many of the reformed practitioners throughout the United States, have renounced the use of cathartics altogether, and many others now employ them very sparingly. Dr. Patten of Danvers, Mass., who has been in practice seven years, informs me, that with one exception, he has not given a particle of physic for the last five years. The exception alluded to, was a woman who was very costive, and at the urgent solicitation of the patient, he consented that she might take a cathartic, but it was productive of more harm than good.

980. Dr. Cameron, recently of Boston, says in a letter, "I formerly used bitter root in my practice, but observing its bad effects on many of my patients, have abandoned it altogether. I am satisfied that physic is not necessary in any possible case. I never found any difficulty in procuring an evacuation of the bowels, in the most obstinate case of colic, by using cayenne freely, together with injections and the vapor bath. I have had at least one hundred and

fifty patients under my care within the last six months, comprising all ages, and almost every form of disease peculiar to our climate, and in these cases did not use a particle of physic. In truth, it only aggravates disease, and has no tendency to remove the cause of a complaint. I have been in practice, altogether, about six years, and during the last four years, have not employed cathartics in any form or shape. I may further add, also, that during this period, I have not lost more than twelve patients, although constantly and laboriously engaged in my profession.

981. Dr. Comfort of Philadelphia, who is a very prominent and successful practitioner, told me some months ago, that he had not used purgatives in any form, for three years, and he had no disposition ever to employ them again. He expressed the belief that he has been much more successful in his practice since he laid them aside.

982. I have a letter from Dr. Smith of Newtown, Bucks County, Pa., in which he states that he has been constantly engaged in the practice of medicine for the last ten years, and for the last five or six years, has entirely dispensed with the use of cathartics. He first became convinced of their deleterious effects, during the prevalence of an epidemic fever in his neighborhood, in which the diplomatised physicians lost seven out of eight of their patients, while he did not lose more than one in twelve. He did not employ cathartics in this affection. He also mentions the case of a child, with convulsions, to which he was called, as showing the evil tendency of purgatives. "It had been successfully treated," he says, "but from some cause or other suffered a relapse, and its parents insisted that it should have a cathartic. The dose was accordingly administered, and for a time it seemed to operate mildly and favorably, but the child soon began to sink, and in less than twelve hours was a corpse. Since that time I have never given cathartics, and have uniformly raised my voice against their employment."

983. Dr. Chapman of Boston, who has had an extensive infirmary practice for the last three or four years, assures me that he has not used a purgative of any description during this period, and his success has been equal to that of any other practitioner in the country.

984. Dr. Weeks of Chester County, Pa., in a communication to the Manual, says, "When I first engaged in practice in this county, I was called to a case in which the evacuations from the bowels, after the repeated use of the syringe, did not give me entire satisfaction; and from some circumstance, not now remembered, I was led to think a purge would probably produce the desired result. I procured one, and upon my next visit carried it

in my pocket. I looked at the evacuations, felt the patient's pulse, and was on the eve of prescribing the pills, but concluded to defer it a little longer. I ordered an enema, then an emetic, and the continued use of cayenne. On my way home, I accidentally broke the box containing the pills, whereupon I threw them away, and had occasion to thank my stars, for at the next visit the patient was better, and he very soon recovered. My candid opinion now is, that had I administered the pills, he would have died from their effects.

985. Dr. Samuel Thomson long ago discarded the use of cathartics. He says, "They should not be used in any case whatever. They irritate the bowels, and destroy the equilibrium of the circulation. Since my agents have discarded butternut and bitter root, they are much more successful in their practice."

986. Notwithstanding all that may be said in opposition to the use of cathartics, there are many conscientious and intelligent people who consider them useful agents in the treatment of disease, and as one individual is as much entitled to his opinion as another, especially in matters relating to health, I have concluded, at the suggestion of my friends, to describe a few of the cathartics in common use, that the purchasers of this work may employ or reject them, according to their own discretion. Let it be borne in mind, however, that cathartics are injurious in proportion as they are active or drastic, and though they may be used with comparative impunity in the early stages of disease, before the patient is much reduced in strength, they should be particularly avoided in cases of great debility. I would remark, also, that they appear to be highly injurious in cutaneous affections, such as measles, and smallpox, for they cause the eruption to disappear, in many instances, and direct the force of the disease to the internal or vital organs. In speaking of the properties and uses of the different cathartics, I shall avail myself, to a considerable extent, of the remarks of medical authors, who have employed them extensively in their practice.

BUTTERNUT.

Juglans Cinerea—Inner Bark.

987. This species of walnut, says Michaux, is known in the United States by different appellations. In Massachusetts, New Hampshire, and Vermont, it bears the name of *oil nut;* in Pennsylvania, Maryland, and on the banks of the Ohio, it is generally

known by that of *white walnut;* and in Connecticut, New York, New Jersey, Virginia, and the mountainous districts of the upper parts of the Carolinas, it is called *butternut*, the latter of which is the most universal. It frequently attains the height of fifty feet. The leaves are two or three inches long, rounded at the base, acutely pointed, toothed along the edges, and somewhat downy. They are arranged in pairs on a long footstalk, with an odd one at the extremity. The tree yields a well known fruit, which, when half grown, is made into pickles, and in the mature state, is esteemed for its kernels, which have an oily and pleasant taste, and are much used as an article of food.

988. On the living tree, says Michaux, the inner bark, on its first exposure, is of a pure white, but it immediately becomes of a beautiful lemon color, and soon after changes to a deep brown. If the bark be perforated just before the leaves expand, a copious discharge of sap ensues, which, by evaporation, affords sugar of a very good quality, but inferior to that of the sugar maple.

989. Properties and Uses. Dr. Beach says, "During the American Revolution, when medicines were scarce, the butternut was brought into use by the physicians of the hospitals, and was esteemed by them an excellent substitute for the ordinary cathartics. The extract made from the inner bark is alone employed. When given alone, in doses of from fifteen to thirty grains, it operates as an active cathartic, without 'occasioning heat and irritation.' It is thought to be very applicable in indigestion, and as an aperient in habitual costiveness, as it is not apt to leave the bowels in a costive state, like other cathartics. The extract should be made from the bark, in the months of May or June."

990. Dr. Thomson says, "A sirup made by boiling the bark, and adding one third molasses, with a little spirit, is a useful remedy in the worm complaints of children. The buds and twigs may be used for the same purpose, and are more mild. The bark is the principal ingredient in Dr. Hawkes's rheumatic, and cancer pills, and also of Chamberlain's bilious cordial." I will do Dr. Thomson the justice to say, however, that, although he has given butternut the above recommendation in his Guide, he has not used the article in his own practice for many years.

991. Dr. Howard says, "Butternut may be prepared in the form of extract, pills, sirup, or cordial. For the latter, take any quantity of the fresh bark, split it into slips half an inch wide, and bruise it well with a hammer; put it into an earthen vessel, packing it close, and add boiling water sufficient to cover the bark;

set the vessel on coals near the fire, having it closely covered, and allow it to simmer for one or two hours. This done, strain the liquor, make into a sirup with sugar or molasses, add one third or one fourth the quantity of proof spirit to preserve it, and bottle for use. The dose for a child is from a half to two teaspoonfuls, repeated every half hour, or hour, until it operates. For grown persons, the dose must be larger."

992. The bruised bark of the butternut, applied to the skin, will produce a blister.

BARBERRY.

Berberis Vulgaris—Bark of the Stem and Root.

993. The barberry is a common shrub in the New England States, and grows as far south as Virginia. It is found usually along fences, and in rocky or stony fields, rising to the height of eight or ten feet. The stem is covered externally with an ash colored bark, and is armed with triple thorns, which point downward. The inner bark is of a beautiful yellow color. The leaves grow in clusters somewhat in the form of a cup, varying from five to ten in number; they are unequal in size, narrow at the base, rounding, or blunt at the point, and bordered with teeth, which terminate in bristly points. The flowers are yellow, and appear in May or June, hanging in loose clusters. These are succeeded by oblong, scarlet berries, each of which contains two hard, brown seeds. They remain upon the shrub during winter, and are often seen in the spring, after the leaves have expanded.

994. It is a popular belief that barberry injures rye or wheat, growing in its vicinity, but this opinion is contradicted by late eminent writers.

995. Properties and Uses. The bark of the barberry is bitter, and slightly astringent. In small doses it is regarded as tonic and laxative; but in larger doses operates as a mild purgative. The following preparation of it was formerly used by Dr. Thomson, in jaundice. Take a gallon of cider, add four ounces of the powdered bark, and four ounces each of the American aspen, and wild cherry tree bark; let them steep in a closely covered vessel by the fire, or some other warm place, for several days, when the liquid will be fit for use. Half a tea-cupful of this, with sugar or molasses to suit the taste, may be taken three or four times a day, but particularly in the morning and evening.

Dr. Thomson informs me that it improves the appetite, removes the yellow tinge from the eyes and skin, and produces a peculiar sensation throughout the whole system. It is also used as a restorative medicine in the spring, in case of languor or debility. Those who employ it, should not take it in quantities sufficiently large to excite purging.

996. The powder, with a view to its cathartic operation, is taken in the dose of a tea-spoonful, and repeated every two or three hours, until the desired effect is produced.

997. Barberry jelly, dissolved in water, makes an agreeable and useful drink in dysentery, putrid sore throat, and malignant fevers. It quenches thirst, and is said to be an excellent antiseptic.

BLACK ROOT.

Leptandra Virginica—The Root.

998. This plant has a number of common names, as Brinton root, Bowman root, Culver's physic, and tall veronica. It is found throughout the Northern and Southern States, in the neighborhood of streams, and in dry, open situations. The root is perennial, irregular, of a dark or black color, and very fibrous. The stem is erect, round, and from three to six feet high, furnished with leaves in whorls, and supporting at its top a long spike of white flowers, which make their appearance in August.

999. Properties and Uses. The root is prominently bitter, and has been represented to me by some practitioners as operating mildly upon the bowels, without producing debility or prostration, while others contend that it is extremely harsh in its effects. Dr. Howard says, "The black root is highly celebrated as an efficient purge, operating with mildness and certainty, without producing that depression of the living powers so common to other purgative medicines. In typhus and bilious fevers, it removes the black, tarry, morbid matter from the intestines, in a most natural manner, without weakening the tone of the bowels, or leaving behind it the poisonous sting so often remaining after the use of calomel, that almost universal cathartic in fevers. The black root is also a diaphoretic, antiseptic, and tonic. It may be taken in the dose of a heaped tea-spoonful, in half a gill of boiling water, sweetened, if most agreeable, and repeated in three hours, if it does not operate."

1000. Dr. Smith of New York, remarks, "This root is an

excellent purge, particularly in pleurisy; it possesses considererable narcotic property, and sometimes it is necessary to rouse the patient, to keep him from falling asleep during its operation."

1001. Rafinesque says, "The roots lose much of their virulence by drying, and a drachm of the powder becomes an uncertain purgative; when fresh, however, they are drastic and dangerous, and are said to produce bloody stools, dizziness, vertigo, and abortion." The safest mode of employing it, he adds, is in a weak and cold infusion.

MANDRAKE.

Podophyllum Peltatum—The Root.

1002. The mandrake or May apple grows in rich soils, and has a jointed, creeping root, about half the size of the finger. The stem is smooth, round, a foot or more in height, and divided at the top into two leafstalks, each of which supports a large, hand-shaped leaf at its extremity, somewhat resembling that of the golden seal. A solitary white flower expands in May, and is supported in the fork of the stem, on a nodding peduncle one or two inches long. It is succeeded by fruit of a yellowish color, and acid taste, which many people eat with avidity. It resembles a lemon in shape, but is smaller, and has a smooth skin.

1003. The plant is often found in large patches, growing luxuriantly in moist shady woods, and low, marshy grounds.

1004. Properties and Uses. The root is bitter and nauseous. Dr. Howard says, "It is considered poisonous and unfit for medicine by some, while others regard it as a most valuable article. The dose usually given is from a half to a whole teaspoonful. The best time to give it, is at night, on going to bed, and it will commonly operate by the next morning."

1005. "Podophyllum," says the United States Dispensatory, "is an active and certain cathartic, producing copious liquid discharges without much griping or other unpleasant effect. In some cases it has given rise to nausea, and even vomiting, but the same result is occasionally experienced from every active cathartic. Its operation resembles that of jalap, but is rather slower, and it is thought by some to be more drastic."

1006. The Cherokees use mandrake, says Rafinesque, to expel worms. They also employ the fresh juice of the root as a remedy in deafness, putting a few drops of it into the ear. The

leaves, continues the same writer, are narcotic, two ounces of them, in decoction, being sufficient to kill a dog.

1007. Dr. Lobstein says he has never known mandrake to fail in giving immediate relief in incontinence of urine.

1008. Were I disposed to use a cathartic, there are many which I would select in preference to the mandrake, as I have met with several cases in which it has been productive of serious injury.

BITTER ROOT.

Apocynum Androsæmifolium—Bark of the Root.

1009. The bitter root, called also wandering milk weed, honey bloom, catch fly, American ipecacuanha, and dog's bane, is a perennial and rather handsome plant, flourishing in almost every part of the United States. It blooms in June and July, and is found along fences, and in the borders of woods, usually preferring a dry or sandy soil. The root is smooth, creeping, and not quite so thick as the little finger. It is covered with a thick bark, and gives up stems at various distances. These are erect, branched, from two to three feet high, sometimes reddish on the side exposed to the sun, and invested with a tough or fibrous bark. The leaves are opposite, not very numerous, smooth upon the upper surface, pale and somewhat downy beneath, acute at the end, and about two inches and a half in length. The flowers are bell-shaped, white externally, tinged with red within, and resembling those of the buckwheat at a distance, though the similitude vanishes on a closer inspection. They are arranged in little drooping clusters, on the ends of the branches. The seed vessels or follicles are four or five inches long, slightly curved, slender, pointed, and suspended from the branches in pairs. They contain a feathery or silken down, which is attached to very minute seeds.

1010. In New Jersey and Pennsylvania, the blossoms usually disappear about the first of July, but in different parts of Massachusetts, I have observed them in bloom as late as the middle of August. Every part of the plant abounds in a milky juice, which exudes when it is wounded.

1011. Properties and Uses. Bitter root has a nauseous, excessively bitter, and somewhat pungent taste. A teaspoonful of the powder will frequently operate as an emetic, and is sometimes used by physicians in the country for that purpose, in-

stead of ipecacuanha. It occasions weakness or languor, however, from which the patient is sometime in recovering. It is also in popular use as a cathartic, and in the recent state, is very drastic, but its power is diminished by keeping, and destroyed by age. I am told by those who have employed it extensively, that after it has been collected six months, its action upon the bowels is comparatively mild."

1012. Dr. Thomson says, "Bitter root is one of the best correctors of the bile with which I am acquainted, and is an excellent medicine to remove costiveness, as it will cause the bowels to move in a natural manner. A strong decoction of the root, made by steeping it in hot water, will operate as a cathartic, if taken freely, and sometimes as an emetic, and is almost sure to throw off a fever in its first stages."

1013. Since Dr. Thomson published the above recommendation of bitter root, he has renounced the use of it altogether, and considers it a dangerous article.

1014. Bitter root is much esteemed by many people as a tonic, combined with other medicines, and administered in small doses; but from its tendency to irritate the bowels, and act as a cathartic, its employment is somewhat hazardous. I have known it to excite violent purging, when given only with a view to its tonic effects.

1015. "A wash made by steeping the root," says Dr. Howard, "is good for ulcers, and scald head, and probably may be found useful as an external application in many diseases of the skin."

1016. Dr. Eberle has introduced this plant into his Materia Medica, and highly extolled its virtues as an emetic and tonic, but he says nothing of its active cathartic properties.

1017. Some experienced practitioners have informed me that bitter root exercises a specific influence over the liver, but I suspect its action in this respect, is somewhat analogous to that of calomel, which, according to Professor Dunglison, "irritates the lining membrane of the duodenum, and this irritation extends along the biliary ducts to the liver, the secretion of which is augmented." (936.) From the well known effects of bitter root upon the stomach and intestinal canal, it is reasonable to infer, that it produces an irritation consecutively in the duodenum, biliary ducts, and liver, in the same manner as calomel, and if such be the fact, it cannot be of much value as a "specific" in affections of the latter organ.

MISCELLANEOUS PLANTS AND ARTICLES OF THE MATERIA MEDICA.

ALCOHOL.

1018. Alcohol or rectified spirit of wine, is the active ingredient in all intoxicating liquors. It is formed during what is termed the vinous or alcoholic fermentation of vegetable juices containing sugar, as those of the apple, grape, and sugar-cane. Wine and cider contain alcohol, but in limited quantities compared with *ardent spirits*, which are the product of distillation. Chemists have estimated that a person who drinks a bottle of strong Madeira, swallows at least a pint of ardent spirit, of the strength of brandy or gin; and even currant wine, which is generally regarded as an entirely innocent beverage, is nearly one half ardent spirit. The older a wine becomes, the more alcohol it contains, and consequently the more sparingly it should be used. Brandy contains about 60 per cent. of pure alcohol, rum 54 per cent., and gin 51½ per cent. The first is distilled from wine, the second from the juice of the sugar-cane, and the third from fermented grain, with the addition of juniper berries, to give it a peculiar flavor. Brandy and rum have each a flavor of their own, dependent on a volatile oil contained in the material from which they are derived.

1019. Alcohol is obtained by frequently distilling any of the ardent spirits. That which is sold under the name of alcohol, however, contains a considerable portion of water, and other impurities. It has a strength of about 80 per cent. Pure alcohol possesses the same properties from whatever substances obtained. It is so volatile as to evaporate speedily, and has never been known to freeze in the coldest temperature. It burns with a blue flame without smoke, and leaves no residuum. Combined with an equal proportion of water, it forms proof spirit.

1020. Alcohol dissolves the essential oils, and makes the essences. It is also a solvent of soaps, balsams, camphor, and many other substances which do not yield their properties to water. It does not act upon the gums, properly so called, as those of the peach, plum, and cherry trees. It unites with water in every proportion.

1021. Alcohol is not much used in the new practice, except in the preparation of rheumatic drops, and the various tinctures; and the milder forms of it, as wine, and cherry spirit, will generally suffice for these. Much injury is undoubtedly done, by taking al-

cohol into the stomach with medicine, and the sooner there is a reformation in this respect, the better it will be for the health and lives of the people.

1022. The habitual use of alcohol, in any of its forms, gives rise to many serious diseases, as inflammation of the stomach, nausea, vomiting, liver complaints, dropsy, inflammation of the lungs, hoarseness, cough, eruptions of the skin, epilepsy, gout, palsy, and apoplexy. It not only destroys the body, but also the mind, and renders the individual entirely reckless of his character, and moral obligations. In the form of wine, or brandy, it is used by the medical faculty as a stimulant in the low or sinking stages of disease, but it is difficult to imagine that a substance which is so destructive to those in health, can be of service in strengthening or invigorating the sick. (721.)

1023. Many people imagine that ardent spirits are beneficial in cold weather, but this is a mistaken idea, for, although they stimulate for the moment, they leave the system in a state of languor or debility, and the individual finds that his susceptibility to the effects of cold is greatly increased. Cullen very properly enumerated wine and brandy among the *narcotics*.

1024. In warm weather, also, alcoholic drinks are thought by some to be indispensable; and until the temperance cause commenced its reformation, a bottle of rum would be found in the harvest field, almost as constantly as the scythe, or sickle. But instead of invigorating the laborer, it impairs his strength, and renders him feverish, and oppressed. Dr. Bell, speaking of the use of rum in the West Indies, says, "whether taken habitually, moderately, or in excessive quantities, it always diminishes the strength of the body, and renders men more susceptible of disease, and unfit for any service in which vigor or activity is required."

ALKALIES.

1025. Alkalies are well known as substances which neutralize acids, and render them inert. Hence their frequent use in dyspepsia, heartburn, and other diseases accompanied with acidity of the stomach. They only afford temporary relief, however, and do injury if frequently employed. Some practitioners are in the habit of prescribing the use of an alkaline draught three or four times a day, instead of adopting means to restore the tone of the stomach, and thereby prevent the formation of acid. Persons, however, who indulge in habits of gluttony, and "keep a brewery of vinegar in their stomach," as a celebrated writer has observed, must expect to suffer evil consequences.

1026. It is a common practice in our towns and cities, where drug shops are scattered in every direction, to take soda water several times a day, under an impression that it will keep the stomach healthy, but it has a directly contrary effect, and tends to disorder the stomach, because the soda neutralizes the acid of the gastric juice, and thereby interferes with the digestive process.

1027. The alkalies in common use, are pearlash, and sal æratus. The first is the potash of commerce, deprived of its impurities; the second is the pearlash highly charged with carbonic acid gas, constituting what is termed the *bicarbonate of potash*.

1028. Pearlash is too acrid for internal use, but the sal æratus is more mild and agreeable, and may be taken in the dose of a level tea-spoonful, dissolved in two thirds of a tea-cupful of water. A still better alkali, however, is the *bicarbonate of soda*, which is free from irritating properties. The usual dose is a moderately heaped tea-spoonful.

1029. If an emetic is slow in operating, after cayenne and bayberry tea has been administered freely, an alkaline draught should be employed. The addition of an alkali to the injections, also, is highly serviceable, where acid in the bowels is suspected. A patient with the smallpox, or any severe cutaneous disorder, is greatly benefited by sponging him, while in the vapor bath, with a tepid solution of sal æratus, or bicarbonate of soda, dissolving two tea-spoonfuls of the alkali in a pint of water.

ARCHANGEL.

Lycopus—The Herb.

1030. There are two species of archangel used in medicine, one of which is of a red or purple color, and the other green. The names of Gipsey weed, Paul's betony, water hoarhound, and bugle weed, appear to be common to both. They are usually found side by side in meadows, and along ditches and creeks, generally preferring a wet or damp soil.

1031. The purple archangel (*lycopus virginicus*) has a creeping and fibrous root, which sends up a stem from six to eighteen inches high, bluntly four cornered, sometimes branched, and furnished with opposite leaves. These are tapering at both ends, of a red or purple color on the under surface, and bordered with teeth of various sizes. The flowers are white, very small, and grow in whorls around the stem. They continue in bloom during July and August.

1032. The green archangel (*lycopus europæus*) has a branch-

Balm of Gilead. Populus Candicans.

Balsam Poplar. Populus Balsamifera.

Miss G Meagins del.

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ing stem, with four sharp corners. The leaves are narrower than those of the other species, and the teeth more acute. The flowers are disposed in similar whorls, but are rather more crowded, and remain in bloom during the summer, and a portion of the autumn.

1033. Between these two species, there are a number of varieties, which possess analogous properties.

1034. The purple archangel has a balsamic, somewhat astringent, and slightly bitter taste. It is in popular use in some parts of the country as a cure for diarrhœa and dysentery. Cutler says the juice of it will impart a permanent black to linen, woolen, and silk. According to Withering, the Gipsies use it to stain their skin, whence the name of Gipsey weed. It is frequently put into beer, and makes a very wholesome beverage. The green archangel is exceedingly bitter, and rather nauseous. It has acquired considerable reputation in Europe as a remedy in fevers.

1035. Properties and Uses. These herbs are astringent and tonic, and may be usefully employed in various slight affections, as fevers, and bowel complaints, in their early stages. They are beneficial also in indigestion and loss of appetite. The people in some parts of New Jersey, use the infusion as a drink in indolent or badly conditioned sores, and employ it externally, at the same time, as a cleansing wash.

BALM OF GILEAD.

Populus Candicans—The Buds.

1036. This tree rises to the height of forty or fifty feet, and has a diameter of eighteen or twenty inches. It is very common in New Hampshire, Massachusetts, Rhode Island, and Connecticut, where it is cultivated as an ornamental tree, or rather, perhaps, as a shelter from the sun. In some places it is called *heart-leaved balsam poplar*. It grows in open, airy situations, being rarely, if ever, found in woods or forests. The upper portion of the trunk and branches are clad in a smooth, whitish bark. The leaves are broad and heart-shaped at the base, edged with small teeth of irregular sizes, acute at the apex or point, and of a deep, rich green upon the upper surface, variegated with yellowish or straw colored veins. The blossoms are arranged in long, slender, pendulous clusters, and appear in April, in advance of the leaves. They are succeeded by a silky substance, which

is carried in every direction by the wind, and becomes annoying sometimes from its abundance.

1037. There is another species of this tree, which is prized for its buds. It is called *balsam poplar* and *tacamahaca*, and is distinguished by botanists as the *populus balsamifera*. Its leaves are three or four inches long, tapering at both ends, of a silvery or dullish white color on the under surface, and bordered with a few indistinct teeth. The elder Michaux, in his travels through Lower Canada, observed this tree in considerable quantities on the shores of Lake St. John, and at Malebay, near the river St. Lawrence, but it became less common as he approached Montreal. Mr. Thomas Say, who made a collection of plants in the North Western Territory, mentions it as growing in the neighborhood of Lake Superior. It is found occasionally in New York, Vermont, Massachusetts, and Connecticut. I never saw it in Pennsylvania, excepting a small tree which grew on the farm of Dr. Logan, near Philadelphia.* In Canada, notwithstanding the severity of the winter, it attains the height of seventy or eighty feet, and is often three feet in diameter.

1038. The buds of both these species, have a very pleasant odor, and are covered in the spring with a glutinous, yellow balsam. They should be gathered just before they burst into leaves. The balsam of the tacamahaca is collected in Canada in shells, and sent to Europe, where it is sometimes used as a stimulant and tonic, and for external applications. In Liberia, where the tree flourishes, the inhabitants prepare a medicated wine from the buds, which they use in scurvy, and cases of obstructed urine.

1039. Properties and Uses. The buds are balsamic, somewhat bitter, and very pungent. For internal use, they should be employed in the form of tincture, as water will not extract the whole of their virtues. To a pint of cherry spirit, or New England rum, an ounce or an ounce and a half of the buds may be added, previously pounding or bruising them in a mortar. Let them steep for a week or fortnight in a closely stopped bottle, shaking them three or four times each day, when the tincture will be fit for use. This is a restorative, and is useful in cases of debility. It strengthens a weak stomach, and promotes appetite and digestion. A tea-spoonful, sweetened with loaf sugar, may be

* Mr. Nuttall informs me that the leaves of this tree vary in size according to locality, or rather, he is disposed to think that there are different species of it which have not been acknowledged by botanists. The leaves figured by Michaux as the *populus balsamifera*, are much larger and broader than those represented opposite the preceding page.

Celastrus Scandens

taken three or four times a day. It is a valuable application for bruises, sprains, cuts, unhealthy gums, and ulcers of the mouth.

1040. The buds are an ingredient in the *meadow fern ointment.*

BITTER SWEET.

Celastrus Scandens—Bark of the Root.

1041. The bitter sweet is a woody vine, attaining, in favorable situations, the height of thirty or forty feet. It twines around the branches of trees, similar to the grape-vine, and creeps upon hedges, fences, and rocks. It has various names, as staff tree, red root, fever twig, and wax work. It is common throughout the Northern and Southern States, thriving the most luxuriantly in a rich, damp soil.

1042. The root is creeping, of a bright orange color, about the size of the middle finger, and several rods in length. The stem is covered with a brown or reddish bark, and rarely exceeds an inch in diameter. The leaves are somewhat tapering at the base, with minute teeth along the margins, and a sharp and extended point. The blossoms are of a greenish yellow color, and very fragrant, blooming the first or second week of June. The berries grow in clusters, and remain upon the vines during winter. Early in the autumn, they are of an orange color, but after the first or second frost, the external covering divides into three valves, which turn backward, and disclose a beautiful scarlet berry in the centre.

1043. The *solanum dulcamara* or *woody nightshade*, is sometimes confounded with this plant, because the name of *bitter sweet* is common to them both. The dulcamara possesses poisonous properties, and hence the necessity of this caution. It has a slender, vine-like stem, seldom exceeding eight feet in length, with leaves of a dull green color, and clusters of elegant purple blossoms, which remain in bloom from June to August.

1044. Properties and Uses. The bark of the root has a sweetish, and rather nauseous taste. A strong tea, made by boiling four ounces of the bark in a quart of water, has been given in the dose of a gill three times a day, in diseases of the skin, liver complaints, and impurities of the blood, but not, I presume, with any particular advantage. In some instances, it appears to have a favorable action upon the kidneys. Taken for a

week, or more, it is apt to produce a prickling and very unpleasant sensation of the skin. It is not much used in the new practice, excepting as a component part of the *nerve ointment.*

BITTER THISTLE.

Centaurea Benedicta—The Herb.

1045. The bitter or lovely thistle is an annual plant, which is cultivated in gardens both for ornament and medical use. It blooms in June and July. The root is straight, and four or five inches long. The stem is erect, grooved, hairy, from one to two feet high, and branched near the top. The leaves are six or seven inches in length, broad at the base, of a light green color upon the upper surface, whitish beneath, with curling margins, and very large teeth, each of which is terminated by a sharp point. The flowers are yellow, and surrounded by a cluster of ten leaves, the exterior five of which are the largest.

1046. The bitter thistle should be gathered when in bloom, quickly dried, and kept in an airy place, to prevent it from moulding.

1047. Properties and Uses. This plant has an intensely bitter taste, which it loses in some measure by drying. Dr. Thomson recommends it as an excellent corrector of the bile. Its virtues are extracted by warm, or even cold water. The infusion may be advantageously employed in weakness of the stomach, or loss of appetite. Taken warm, and in sufficient quantities, it produces a copious perspiration, especially if the patient be seated by the fire, or covered up in bed. The decoction is nauseous, and in large draughts, causes vomiting. The dose of the powdered leaves is a tea-spoonful, which may be taken three or four times a day in molasses or honey, or in combination with other medicine.

BLOOD ROOT.

Sanguinaria Canadensis—The Root.

1048. This plant is found in woods, thickets, and in damp, rocky grounds. It blooms early in the spring. The root is two or three inches long, about the size of the finger, and abruptly terminated. When broken, it emits a bright orange colored juice.

The leaves grow on channelled footstalks, and are divided into large, roundish lobes. The flower is mostly white, but sometimes tinged with rose, or purple, and is supported at the top of a naked stem, which rises from six inches to a foot in height.

1049. Properties and Uses. Some practitioners entertain a high opinion of blood root as an emetic, and consider it but little inferior to lobelia inflata, but medical authorities are not very strongly in its favor. "Sanguinaria," says the United States Dispensatory, "is an acrid emetic, with stimulant and narcotic powers. In small doses it excites the stomach, and accelerates the circulation; more largely given, it produces nausea and consequent depression of the pulse, and in the full dose occasions active vomiting. The effects of an overdose, are violent emesis, a burning sensation in the stomach, faintness, vertigo, dimness of vision, and alarming prostration."

1050. Whatever objections there may be to blood root as an emetic, however, it is a valuable remedy in polypus of the nose, and has been frequently employed with success. Dr. Brice of Newark, Ohio, narrates three cases which he cured by the use of this article. One of the patients was a youth, in whom the polypus projected out of the nostril. A physician in a neighboring town tore away part or the whole of it, and the operation was followed by a profuse hemorrhage. The polypus returned, however, and acquired its original dimensions, but by the application of blood root, both in powder and decoction, it soon began to assume a pale color, and to shrivel. Another patient was a little girl, in whom the polypus was distinctly seen, but did not present itself entirely. The same application effected a radical cure. The third case was a man rather advanced in life, whose nose was much obstructed by the size of the polypus, but it was permanently removed by the same treatment.*

1051. I have known two cases of polypus to be radically cured by using the powdered sanguinaria as a snuff, several times a day. Steeped in vinegar, also, it may be applied with advantage to warts, ring worms, and tetters.

1052. The dose of the blood root as an emetic, is from ten to fifteen grains of the powder. As a purgative, it is employed in smaller doses.

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* Western Journal of Medicine and Surgery for 1840.

BUCK HORN BRAKE.

Osmunda Regalis—The Root.

1053. The buck horn brake is found in meadows, and low, moist grounds. The main root, which is the only medicinal part of the plant, is about two inches long, and somewhat in the shape of a horn. It consists of a number of longitudinal scales, which have silky, transparent borders. The other portion of the root is composed of small, brownish fibres, which are very numerous, and firmly matted together. The stems are smooth, slender, branched, and about three feet high. The leaves are accurately delineated in the opposite drawing, and therefore do not require a description. The flowers appear in June, arranged in a cluster at the top of the stem, and are succeeded by numerous seed vessels, which are at first green, and subsequently of a brownish color.

1054. The roots should be collected in August, or about the first of April. I have generally found them to be in the greatest perfection at the latter period. They should be dried with care, as there is danger of their becoming mouldy.

1055. The *flowering fern* or *polypod* (*osmunda cinnamomea*) is sometimes used as a substitute for the buck horn brake, but it is not so good. It grows in damp woods and meadows, forming elevated tufts by the matting together of the roots. When the stems first appear in the spring, they are hairy, and of a whitish color, surmounted by the young leaves, curiously rolled up in the form of a scroll, and covered with a downy or wool-like substance. The full grown stems are sometimes four or five feet high. They are furnished with two rows of long, tapering leaves, which are divided into numerous lobes. The flowers are at the top of a separate footstalk, and are disposed in a cluster similar to those of the buck horn brake. They appear in June, and are followed by minute, brownish seed vessels. The root is similar in shape to that of the brake, but considerably larger.

1056. Properties and Uses. The roots of these plants are mucilaginous, particularly that of the buck horn brake. The mucilage is obtained by steeping the roots in hot water, and this, with the addition of loaf sugar, ginger, brandy, and some other ingredients, constitutes an excellent jelly, which is useful in coughs, diarrhœa, dysentery, and soreness of the stomach and bowels. It

is beneficial, also, in recovery from sickness. Half a wine-glass-full is the ordinary dose, and it may be frequently repeated.

1057. The mucilage, mixed with fourth proof brandy, is used in the country as an external application for sprains, and weakness of the back. A single root of the buck horn brake, infused for half an hour in a pint of hot water, is generally sufficient to convert the whole into a thick jelly.

BURDOCK.

Arctium Lappa—The Root and Leaves.

1058. This plant is equally common in Europe and America, growing by roadsides, on ditch banks, among rubbish, and about houses and barns. The root, which is spindle shaped, is a foot or more in length, and thick in proportion. The stem is branching, hairy, round, and three or four feet high. The leaves are very large, and stand on long footstalks; they are heart-shaped at the base, and have wavy or curling margins. The flowers are purple, and disposed in clusters at the top of the stem and branches. They have a globular form, and are furnished with small hooks, by which they become attached to clothes and animals. The flowering period is July.

1059. The stalks are eaten in some parts of Europe with oil and vinegar, as a salad, being cut before the plant is in bloom, and the rind peeled off. Three pounds of the ashes, procured by burning the leaves and stems between the time of flowering and seeding, will yield sixteen ounces of white alkaline salt, equal to the best potash.

1060. Properties and Uses. The root, which loses four fifths of its weight by drying, has a sweetish and mucilaginous taste, with a slight degree of bitterness. A decoction of it, prepared by boiling two ounces of the fresh bruised roots in a quart of water, may be employed in diseases of the kidneys, and obstruction of the urine. A pint may be taken in the course of twenty four hours.

1061. The leaves bruised with a roller, and moistened with rheumatic drops, form an excellent application for sprains, bruises, and other external injuries. They speedily allay the pain, and inflammation. In gouty affections, where the feet are swelled, the same application is equally beneficial.

CAMPHOR.

Camphora.

1062. There are two trees which yield the camphor of commerce. One is the *laurus camphora*, which grows in China and Japan, and is occasionally found in the botanical gardens of Europe and America. The camphor is procured by cutting the roots and branches into chips, and placing them, with a little water, in an iron vessel, covered with an earthen receiver. A moderate heat is then applied, and the camphor ascends in volatilized particles with the vapor of the boiling water, and collects upon rice-straw with which the vessel at the top is lined. In this state it is sent to Europe, or the United States, where it is freed from impurities, and converted into white semi-transparent cakes, as we see it in the shops. Michaux observes that the laurus camphora is susceptible of cultivation in the southern parts of the United States.

1063. The other tree producing camphor, is a native of the northern parts of Sumatra, where it grows wild, attaining the height of one hundred feet. It is found also at Borneo. The camphor is embedded in the trunk of the tree, occupying cavities or fissures, which are a foot or more in length, and three or four inches in diameter. A large tree yields from fifteen to twenty pounds.

1064. Camphor has a fragrant, penetrating odor, and a bitter, pungent taste, with a slight sensation of coolness. When of a good quality, it totally evaporates on exposure to the air. It is slightly soluble in water, and wholly so in alcohol. By the addition of water to the spirituous solution, the camphor is precipitated.

1065. There are a number of plants containing camphor, among which are the elecampane, sage, ginger, sassafras, and peppermint, but not in sufficient quantities for extraction.

1066. Properties and Uses. Camphor is a narcotic poison, and should not be employed as a medicine, internally. It acts upon the brain, producing giddiness and stupor. Christison speaks of a case, in which forty grains had been swallowed, and in the course of twenty minutes, the individual "became weak and languid, and in an hour, giddy, confused, and forgetful. At length he lost all consciousness, during which he was attacked with strong convulsive fits, and maniacal frenzy." In the solid form, according to Orfila, it is capable of producing inflammation of the stomach. The United States Dispensatory says, "immoderate doses occasion nausea, vomiting, faintness, vertigo, de-

lirium, insensibility, drowsiness, convulsions, and sometimes death."

1067. Camphor is an ingredient of Dr. Thomson's *volatile liniment*, which he recommends for bathing sprains, bruises, and painful or rheumatic joints. Added to the rheumatic drops, it may be employed for the same purpose. Dissolved in spirits, and applied to the nostrils, its agreeable and penetrating odor renders it highly serviceable in headachs, fainting fits, and languor or debility occasioned by sickness.

CANADA SNAKE ROOT.

Asarum Canadense—The Root.

1068. The Canada snake root or wild ginger, is an inhabitant of woods, and dry shady places. The root is creeping, jointed, and somewhat fibrous, showing itself sometimes upon the surface of the ground. The stem is five or six inches high, and divided near the root into two hairy leafstalks. Each of these is terminated by a roundish, kidney-shaped leaf, hairy on both sides, whitish beneath, with a net-work of veins upon the upper surface. The blossom rises from the fork of the stem, and is of a purple color, remaining in bloom from May to July. It is frequently concealed from view by decayed leaves or dirt.

1069. The pulverized roots of this plant furnish a brownish colored powder. A drink, known as ginger beer, was formerly manufactured from them, and sold extensively in many parts of New England. The dried leaves, reduced to a powder, make an aromatic and slightly pungent snuff, which is useful in disorders of the head.

1070. Properties and Uses. The root has a strong, fragrant odor, and an aromatic, pungent, and slightly bitter taste. Its virtues are imperfectly extracted by water, for which reason it should be taken in substance. It is a warming, aromatic stimulant, giving rise to perspiration, and like many articles of its class, is useful in flatulency, and pains of the stomach and bowels. The ordinary dose is a moderate tea-spoonful, which may be taken in warm water sweetened, and frequently repeated. In larger doses, it is apt to produce nausea and vomiting.

CATNIP.

Nepeta Cataria—The Herb.

1071. Catnip or catmint grows abundantly by roadsides, and about houses and barns. It has a branching, quadrangular stem, varying from one to three feet in height. The leaves are broad, and heart-shaped at the base, obtusely pointed, dentate, green above, and whitish on their under surface. The whole plant is covered with a very fine down. The flowers are of a reddish or purple color, and appear in July or August. They are disposed in whorls at the ends of the stem and branches. They also grow from the axils formed by the leaves and stem.

1072. Properties and Uses. Catnip has a strong odor, and a bitter, pungent, and aromatic taste. It is a tonic and stimulant, and in the form of tea, promotes perspiration. It is highly useful in colds, suppression of the menses, bowel complaints, colic, and slight febrile attacks. Some of the North American Indians are in the habit of using catnip tea, with the vapor bath, in curing chronic diseases, as rheumatism, and stiffness of the joints. A medical writer says, "Many people consider catnip too simple to deserve much attention; however, it is well for physicians that it is slighted, for if it were used in all cases where it might be with advantage, their services would be less frequently required."

CHAMOMILE.

Metricaria Chamomilla—The Herb.

1073. This plant is frequently cultivated in gardens for family use, and is generally known by the name of *garden chamomile*. Its roots are small and fibrous, sending up a number of stems, which are three or four inches high, and become entangled with each other so as to form a compact bed or mat. The leaves have a feathery appearance, and consist of long flat footstalks, which branch up thickly from the top of the stem, giving off on either side a number of thread-like filaments, or leaflets. The flowers are white, and make their appearance in May.

1074. The chamomile flowers which are sold in the shops, are the product of a plant which grows wild in the temperate parts of Europe, and is also cultivated on that continent for medical purposes. It is generally called *European chamomile*, and is

designated by botanists as the *anthemis nobilis*. It has a slender, downy stem, from six inches to a foot in length, and lies partly upon the ground. Its leaves bear a resemblance to those of the garden chamomile. Its flowers are also similar, but are considerably larger, and do not bloom until August. Eaton states, in his Manual of Botany, that he saw this plant in 1820, growing wild in cultivated fields near Pittsfield, Mass. Mr. Nuttall also observes that it is naturalized in Lewistown, near Delaware.

1075. The flowers of the European chamomile have a fragrant odor, and a bitter, aromatic taste. They contain a volatile oil, upon which their virtues partly depend, and which is driven off at the boiling temperature. The tea should be prepared, therefore, by steeping the flowers in warm water. The garden chamomile is closely allied to this in medical properties, but is not so bitter, and rather more agreeable to the stomach.

1076. PROPERTIES AND USES. Cold chamomile tea is a useful tonic in dyspepsia, and loss of appetite. Taken warm, and in sufficient quantities, it is nauseating, and not unfrequently operates as an emetic. By drinking the tea on going to bed, it produces perspiration, and generally has the effect to arrest a sudden cold. It is also serviceable in violent attacks of colic. Dr. Cullen informs us that he employed it with considerable success in ague and fever, but he found that by giving large doses, it passed off readily by stool, and thereby defeated his expectations of a cure.

1077. Chamomile is a valuable external application for sprains, bruises, and swellings, and for this purpose is generally employed in the form of *nerve ointment*.

CINNAMON.

Laurus Cinnamomum—Inner Bark.

1078. Cinnamon is the inner bark of the above tree, which grows in the East Indies, and rises to the height of twenty or thirty feet. It is also cultivated in the Isle of France, Brazil, Cayenne, and some parts of the West Indies. The bark is obtained from young shoots of the tree, which do not exceed two or three inches in diameter, and when of a good quality, is thin, smooth, and of a light yellow color. It is said to be frequently mixed with that from which the oil has been obtained. Good cinnamon has a pleasant, sweetish, slightly pungent, and highly

aromatic taste, with some degree of astringency. It is very good in bowel complaints, flatulency, nausea, and vomiting. It is very useful also in disguising the taste of unpleasant medicines. It yields a fragrant oil, which, from its high price, is frequently adulterated with alcohol, and some of the fixed oils. The latter, however, may be detected by the greasy stain which they leave on paper. The cinnamon from China is termed *cassia*, in commercial language, while that from other countries, is designated by the common name.

CLEAVERS.

Galium—Several Species—The Herb.

1079. *Pointed Cleavers—Galium Asprellum.* This plant is found in various parts of the United States, but is especially abundant in New England. It has several common names, as rough bed straw, catch weed, and goose grass. It grows along hedges, in damp meadows, and near the margins of streams and ponds, creeping upon bushes, or whatever there is to afford it support. It remains in bloom from June to September, putting forth a profusion of small white blossoms. The root consists of a few hair-like fibres, of a reddish color, sending up a creeping, brittle, four cornered, branching stem, which is rough backward, and from two to four feet in length. The leaves, which are arranged upon the stem and branches in the form of a star, usually including six in number, are from a half to three quarters of an inch long, rough along the ribs and margins, tapering at both ends, and terminated by a delicate and scarcely perceptible point. The flowers are dispersed in terminal clusters, and are succeeded by smooth, round, and very minute seed vessels. The plant is abundantly supplied with prickles, which cause it to adhere tenaciously to the hands.

1080. *Common Cleavers—Galium Aparine.* This does not differ materially from the above, excepting that its leaves are in whorls of eight, and its seed vessels rough and bristly. It blossoms in May or June.

1081. *Yellow Bed Straw—Galium Verum.* This species of cleavers receives its name from the color of its flowers, which are yellow. Its leaves are also in whorls of eight. It has a slender, branching stem, from one to two feet high, and is found on river banks, and in dry, open pastures. Its blossoms appear in June and July, and are followed by smooth seed vessels.

Cleavers, Galium Asprellum

W. Sharp del.

Sharp, Michelin & Co. 17 Tremont Row

1082. *Small Cleavers—Galium Trifidum.* This plant grows in damp or wet places, and is often found along the margins of stagnant water. It seldom exceeds a foot and a half in height. The leaves are in fives upon the stem, and in fours upon the branches. The blossoms are white, and appear in July, succeeded by small, round, smooth seed vessels.

1083. There are several other species of the galium, which are very similar in general appearance to those already described.

1084. Linnæus informs us that the stems of the cleavers are used in Sweden for straining milk, instead of a sieve. The tops are also cut fine, and put into broth, or gruel, in the spring, under an impression that they will purify the blood. Hippocrates, Galen, and Pliny, have all mentioned these plants in favorable terms as medicines.

1085. Properties and Uses. These herbs, in the green state, have an unpleasant odor, and a slightly bitter taste. They have been employed for a variety of purposes, but are chiefly useful as a diuretic. They are of great value in suppression of urine, gravelly complaints, and other affections of the urinary organs. The author of the Botanic Physician says, "When urinary obstructions proceed from a collection of cold, slimy, or muddy substance in the kidneys, or bladder, they effectually clear it out in all cases. In inflammatory affections of the kidneys, or bladder," he further remarks, "the infusion is peculiarly applicable, from its cooling, as well as diuretic quality. It gives great relief in the scalding of the clap."

1086. An ounce and a half of the dried herb may be steeped in a pint of warm water, and the infusion employed freely as a drink. It may be rendered more agreeable by the addition of sugar. Boiling water impairs its strength. I have found great benefit from cleavers, by using it alternately with other diuretics.

CLOVES.

Eugenia Caryophyllata—The Flower Buds.

1087. These are the product of a tree indigenous to the Molucca Islands, and now cultivated at Amboyna, Cayenne, and Sumatra. They consist of the unexpanded flower buds, which are collected when green, dried in the sun, and sent to this country in chests, or bags. They have a hot, aromatic taste, and a

strong, fragrant odor. They are useful in nausea, flatulency, and colic, and are employed in flavoring medicines, especially the *spiced bitters*. The oil of cloves is used as a remedy in toothach.

COCASH.

Aster Puniceus—The Root and Leaves.

1088. This plant is known by various names, as squaw weed, frost weed, meadow scabish, and red stalked aster. The root is perennial and fibrous. The stem is erect, easily broken, two or three feet high, of a reddish color, covered with short, stiff bristles, and thickly branched at the top. The leaves are clasping, rough on the margin and upper surface, tapering at both ends, sharp at the point, and bordered with remote teeth. The stem leaves are five or six inches long; those of the branches are much shorter, and narrow in proportion. The flowers are of a light blue, and grow in spreading clusters at the tops of the stem and branches.

1089. The cocash grows in wet grounds, and by the edges of small streams. The flowers make their appearance about the first of September, and remain in bloom until late in the autumn. The lower or radical leaves, especially about springs, and warm, sheltered places, continue green all winter. They have an agreeable, aromatic taste, with some astringency, and bitterness. The leaves of the stem are endowed with similar properties, but in an inferior degree. The root possesses little or no medical virtue, with the exception of the long fibres which it sends off during the summer; these acquire the size of a pipe stem, and have a pungent or aromatic taste. They are frequently collected in the winter or spring, together with the radical leaves, and used for medicinal purposes.

1090. Properties and Uses. Cocash is an agreeable stimulant, and promotes perspiration. It is perfectly innocent, and may be taken without any particular regard to quantity. The infusion, prepared by steeping the fresh bruised roots and leaves in hot water, is useful in rheumatism, sudden colds, nervous debility, dizziness, headach, pains of the stomach and bowels, and irregularity of the menstrual discharges. The Canadian Indians employ the cocash in rheumatism, and consider it an excellent remedy. They mix the infusion with a small portion of spirit, with a view to its preservation, and use it as occasion requires.

COMFREY.

Symphytum Officinale—The Root.

1091. The comfrey is cultivated in gardens, and grows spontaneously by roadsides, and about houses and barns. The root is perennial, very brittle, black externally, and white within. The stem is upright, hairy, branching, angular, and three or four feet high. The lower leaves are tapering, acute, somewhat wrinkled, and supported on long footstalks; they are hairy upon the upper surface, and also upon the midrib and veins beneath. The upper leaves are shorter, and without footstalks, having a continuation of their margins down the stem. The flowers are of a yellowish or dirty white color, and grow in clusters at the tops of the branches. They remain in bloom from June to August.

1092. PROPERTIES AND USES. The virtues of comfrey are chiefly owing to its mucilage, which is very abundant in the root. The latter, boiled in water, or milk, is employed in diarrhœa, dysentery, and soreness of the stomach, or bowels. It is also useful in coughs, and affections of the lungs. People in the country frequently employ it in combination with other medicines. Comfrey makes an excellent poultice for white swelling, as will be mentioned hereafter, in speaking of that disease.

COOL WORT.

Tiarella Cordifolia—The Leaves.

1093. Cool wort, called also mitre wort, gem fruit, and common tiarella, is found in woods, on shady banks, and in rich cedar swamps, where the ground is not very wet. The leaves are heart-shaped, divided into lobes, bordered with roundish teeth, hairy on both sides, and supported on footstalks eight or ten inches high. The flowers are white, and make their appearance in June. They are arranged in a spike, about an inch long, on the top of a naked stem.

1094. The green leaves of the cool wort are remarkable for having the taste and smell of a cucumber. They should be collected in July, or about the first of August, dried without exposure to a damp atmosphere, and preserved in sealed papers, or covered boxes.

1095. Properties and Uses. Cool wort is a diuretic, and is beneficial in gravelly complaints, gonorrhœa, and suppression of urine. In all cases where the urine is acrid, or thick and high colored, it may be used with advantage. In burning or scalding of the urine, also, it rarely fails to afford relief in two or three hours. It is employed with advantage in affections of the liver, dyspepsia, and acidity of the stomach. In the latter complaint, it appears to counteract the acidity, and to restore the stomach to a healthy tone. Women who are troubled with strangury, soon after confinement, as happens now and then, will derive great benefit from the use of this plant. The infusion, prepared by steeping a handful of the dried leaves in a quart of boiling water, may be employed freely as a drink.

1096. My attention was first attracted to the cool wort by Dr. Smith of Hallowell, Me. He informed me that eighteen years ago, his wife was laboring under a difficulty of the urinary organs, and one of her neighbors recommending cool wort as a remedy, a trial of it was made with entire success, and Dr. Smith has continued to use the herb in his practice, ever since. I have recommended cool wort to a number of patients within the last six months, and they have all reported favorably of its effects. I believe this is the first time it has ever been introduced into any work on materia medica.

ELECAMPANE.

Inula Helenium—The Root.

1097. Elecampane is a showy, luxuriant plant, cultivated in gardens, and growing wild by roadsides. It has a thick, branching, fibrous root, and a straight, hairy, furrowed stem, four or five feet high, and branching near the top. The leaves are large, tapering, waved along the margins, deep green upon the upper surface, downy and whitish beneath, and from six to eighteen inches in length. The flowers remain in bloom from July to August, standing singly upon the ends of the stem and branches. They are of a golden yellow color, and resemble those of the sunflower, with the exception that they are considerably smaller.

1098. Properties and Uses. The root, when chewed, has a glutinous, nauseous, and slightly aromatic taste, succeeded by some bitterness, and a good deal of astringency. Its virtues are yielded to alcohol, and water. A tea of it has been employed, both internally and externally, as a remedy in tetter, itch, and

other diseases of the skin. It has been esteemed for its tonic and diuretic properties, but it possesses these in a very inferior degree. It is often made into a sirup for coughs, and was formerly employed by Dr. Thomson for this purpose, but of later years, he has discarded it as rather too acrid and drying. A tea-spoonful of the powder may be taken two or three times a day, in molasses or honey.

1099. Those who value the elecampane, should dig the roots in the autumn, and cut them into slips previous to drying. The second year's growth is considered the best, as they are apt, after this time, to be tough and fibrous.

FEATHERFEW.

Chrysanthemum Parthenium—The Herb.*

1100. The featherfew or feverfew, both of which names are in common use, is occasionally found in a wild state, but is generally cultivated in gardens. It blooms in June and July. The root is short and fibrous, with a round, branching stem, from six inches to a foot in height. The leaves are numerous, of a yellowish green color, and deeply cut into lobes or divisions, which are bordered with acute teeth. Each of the branches is terminated by a single flower, which consists of a white border, and a yellow centre or disc.

1101. PROPERTIES AND USES. The featherfew is a stimulant and tonic, having a fragrant smell, and a bitter and aromatic taste, with a slight degree of pungency. The warm tea is an excellent remedy in colds, sudden attacks of disease, hysteric complaints, irregularity of the monthly discharges, obstruction of urine, flatulency, loss of appetite, dizziness, and unpleasant sensations in the head. It should be prepared by steeping the leaves and flowers, either recent or dried, in hot water. Boiling diminishes some of its active properties. It is perfectly harmless, and may be taken in almost any quantity. The green herb, in the form of a poultice, is a valuable external application, in severe pain or swelling of the bowels.

1102. The plant should be gathered when in bloom, divested of its roots, and carefully dried in a chamber or loft, where the air circulates freely.

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* *Metricaria parthenium* of some botanists, and *metricaria vulgaris* of others.

FLEABANE.

Erigeron Canadense—The Herb.

1103. This plant, called also prideweed and coltstail, is to be found by roadsides, and in pastures and neglected fields. It varies from one to five feet in height, has a spindle-shaped, fibrous root, an erect, furrowed, hairy, and branching stem, which is thickly set with long, narrow, pointed leaves. These are edged with hairs, and the lower ones are furnished with a few remote teeth. The flowers are very small, white, numerous, and disposed in little clusters on the branches. It blooms from July to September.

1104. PROPERTIES AND USES. This plant is highly pungent to the taste, with a slight degree of bitterness and astringency. It is stimulant, tonic, and diuretic, and has high reputation as a remedy in dysentery. The herb is steeped in hot water, and a tea-cupful of the infusion administered every hour or two, until a cure is effected. The plant possesses a combination of properties which renders it particularly useful in this disease. A gentleman in whom I have every confidence, informed me that he was attacked with the cholera, while travelling in a stage coach, and by chewing the leaves, and swallowing the juice of the herb, checked the discharges without difficulty. I recollect a patient in Boston, who was laboring under a severe attack of dysentery, and was under treatment by Dr. Warren, but without any prospect of recovery. He was much reduced in strength, and the discharges were profuse and bloody. Under these circumstances, he was induced to drink freely of an infusion of fleabane, and in twelve hours, all the unfavorable symptoms were arrested, and the patient considered himself entirely out of danger. He very soon recovered.

1105. The herb should be collected while in bloom. The *erigeron philadelphicum* is said to be identical with this in medical properties.

FIR BALSAM.

Pinus Balsamea—The Balsam and Bark.*

1106. Fir balsam is known by other names, as silver fir, and balsam of Gilead. It is a native of the coldest North American

* *Abies balsamifera* of Michaux.

Fir Balsam. Pinus Balsamea

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regions, inhabiting Canada, Nova Scotia, and Maine, where it attains the height of forty or fifty feet. Michaux observes that it does not appear to constitute masses of woods, but is scattered in greater or less abundance through the forests of hemlock and black spruce. In the United States, it extends as far south as North Carolina, where it is chiefly confined to the mountains. It is found also upon the summit of the Alleghanies, and in the mountainous regions in the North Western Territory. In Massachusetts, it is much prized as an ornamental tree, and is frequently cultivated in pleasure grounds. The trunk, at the base, is twelve or fifteen inches in diameter, and tapers gradually to the top. It has numerous branches, which diminish in length in proportion to their height, and form a beautiful pyramid. The leaves are narrow, flat, grooved upon the upper surface, of a silvery whiteness beneath, and inserted in irregular rows on the sides and tops of the branches. The cones are erect, of a purple color, and four or five inches long.

1107. The balsam is a transparent liquid, which collects spontaneously in blisters upon the trunk and branches, and exudes also by making incisions into the bark. It is usually obtained by puncturing the blisters, and receiving their contents into a spoon, or some similar instrument. It is sold in England and the United States, under the name of *Canada balsam*. It is feebly acted upon by spirit of an inferior strength, but is dissolved in alcohol in the proportion of one part to three.

1108. Properties and Uses. Fir balsam has a pleasant odor, and an oily, and slightly bitter taste. In the form of tincture, it is useful in coughs, affections of the lungs, gleet, fluor albus, gravelly complaints, and soreness of the stomach and bowels. A tea-spoonful may be dropped on sugar, and taken at a dose, repeating it three or four times a day.

1109. A plaster of fir balsam, says Dr. Logan, will heal bad wounds in a very short time. It is also applied to burns and scalds with great benefit.

1110. A decoction of the bark is an excellent remedy in diarrhœa and dysentery. It may be prepared as follows. Take a piece of the bark about a foot long, and an inch and a quarter wide, cut it into shreds, add a pint of water, and boil slowly in a covered vessel for half an hour; strain the decoction, and sweeten with loaf sugar. The liquid thus obtained is of a reddish color, somewhat mucilaginous, and of a balsamic, and slightly bitter taste. Children will take it freely, and it is particularly valuable in the bowel complaints with which they are so often affected. It rarely fails to cure, even in the very worst cases. It diminishes the

pain and soreness of the bowels, and gradually checks the discharges. Combined with slippery elm, it is still more efficient. In this form also, it is highly beneficial in coughs, asthma, soreness of the lungs, and diminished appetite.

GARDEN PEPPER.

Capsicum Annuum—The Pods.

1111. This is an annual plant, cultivated in gardens for domestic use. The stem is one or two feet high, and furnished with long pointed leaves. The blossoms are white. The pods are of various sizes and shapes, but generally of a conical form, pointing downward, and assuming a bright red color in the autumn. They have a biting, pungent taste, similar to that of the African pepper, and may be used as a stimulant where the latter cannot be obtained. They should be collected when fully ripe, and dried in a chamber or loft, where there is a free circulation of air. They are frequently plucked in the green state, and made into pickles. The garden capsicum is far inferior, as a medicine, to that obtained from Africa and the West Indies.

GOLDEN ROD.

Solidago Odora—The Leaves and Flowers.

1112. The golden rod has a woody, branching, fibrous root, which sends up a number of slender, hairy stems, rising sometimes to the height of five or six feet. The leaves are broad at the base, three or four inches long, and taper gradually to an acute point. They are of a light green color, smooth upon the upper and lower sides, but rough along the edges. Held before the light, they exhibit a number of beautiful transparent dots and veins. The flowers, which are of a golden yellow color, are thickly crowded upon the upper sides of horizontal branches, which are given off toward the summit of the stem.

1113. According to Eaton, there are seventy species of the golden rod in the United States, but the plant described above, although nearly resembling many of them in appearance, may be identified by the taste of the leaves or flowers, which is similar to that of fennel or anise. Hence it has been distinguished by the name of *sweet-scented golden rod.* It grows along hedges, and in woods and fields, remaining in bloom from August to September. I found an abundance of it in the summer of 1838, on the farm

Golden Rod Solidago Odora

Miss C. Neagus del. Sharp, Michelin & Co. Ph.

of Mr. Aaron Pollard, in the town of Berlin, Mass., where it was confined to a piece of rocky ground, which had been newly cleared, but not cultivated.

1114. Properties and Uses. The leaves and flowers of the golden rod have a warm, aromatic, and very agreeable taste. They are moderately stimulant, and the tea, administered warm, produces perspiration. It may be usefully employed in allaying nausea, and as a remedy in pains of the stomach and bowels, occasioned by wind. It is also a pleasant drink for children, and may be administered freely. The strength of the plant is impaired by boiling. Its active properties reside in a volatile oil, which has a pleasant odor, and is used to scent the bayberry snuff. According to Pursh, the dried flowers are used in some parts of the United States, as a substitute for common tea. The essence, says Dr. Thomson, is beneficial in headach. The head should be bathed with it, and a tea-spoonful taken internally. It is also a pleasant addition to nauseous or disagreeable medicines.

GOLDTHREAD.

Coptis Trifolia—The Root.

1115. This is an evergreen plant, and is found in Canada, New England, and New York. In some places it is known by the names of yellow root, and mouth root. Where the situation is favorable, it grows in large beds, and entirely covers the ground. It delights in swamps, morasses, and low damp woodlands, but is found also on the White Mountains in New Hampshire, and other elevated regions.

1116. The roots are six or eight inches long, and of a bright yellow color, appearing like threads of gold. The leaves are smooth, polished, and veiny, resembling those of the strawberry, being in threes at the top of a slender stem. They have an acute base, and scolloped edges, with very minute, projecting teeth. The flower is white, and supported at the top of a naked stem. It makes its appearance in May, and is succeeded by a number of seedvessels, disposed in the form of a star.

1117. Properties and Uses. The root is bitter, and yields its virtues to water, and alcohol, forming with the latter a bright yellow tincture. It is not easily reduced to powder. The people of New England chew it as a remedy in sore mouth, and also employ the decoction as a gargle in putrid sore throat.

It is a pleasant tonic, and in debility, or loss of appetite, may be taken in the dose of a tea-spoonful, two or three times a day. The tincture, prepared by adding an ounce of the roots to a pint of alcohol, may also be taken in the dose of a tea-spoonful.

HOLLYHOCK.

Althæa Rosea—The Blossoms.

1118. The hollyhock is a common plant in our gardens, where it is chiefly cultivated for ornament. It has a branched and tapering root, which sends up an erect, hairy, light green stem, from six to eight feet high. The leaves are roundish, heart-shaped at the base, wrinkled, hairy on both sides, and supported on long, round footstalks. The margins are formed by angles or projections, varying from five to seven in number, and bordered with semi-circular teeth. The flowers exhibit a variety of colors, but the most predominant are red, white, and purple. They are thickly crowded upon a long, terminal spike, and bloom from July to August.

1119. PROPERTIES AND USES. The blossoms cōntain a large proportion of mucilage, both in the recent and dried state, which renders them useful as a demulcent. The root is also mucilaginous, and if cut into shreds, and boiled, yields this property in considerable abundance. The blossoms are sometimes used in making the *anti-dyspeptic bread.*

HORSERADISH.

Cochlearia Armoracia—The Root.

1120. Horseradish is cultivated in gardens for culinary purposes, and is too well known to need a description. The grated roots, mixed with water, or vinegar, are in general use as a condiment. They are of a warming nature, but too volatile to be of much service as a stimulant. They invigorate the digestive organs, and render the appetite more keen. The infusion, taken warm, operates as an emetic. It also increases the secretion of urine, and is sometimes employed by the old school physicians for that purpose. A blister may be raised by an external application of the leaves. Horseradish is not used as a medicine in the reformed practice.

HOARHOUND.

Marubium Vulgare—The Herb.

1121. Hoarhound is cultivated in gardens, and grows wild by roadsides. It has a fibrous root, and a whitish, hairy, four cornered stem, which rises from twelve to eighteen inches high. The leaves are roundish, wrinkled, edged with teeth, covered with a white down on the under surface, and supported in pairs on short footstalks. The flowers are small and white, growing in whorls around the stem, and expanding in July and August.

1122. Properties and Uses. The hoarhound has an aromatic smell, which is diminished by drying, and a bitter, though not disagreeable taste. It is a stimulant, and tonic, and if given in large doses, will act upon the bowels. An infusion of the leaves, sweetened with molasses or honey, is beneficial in asthma, coughs, hoarseness, jaundice, suppression of the menses, indigestion, and worms. Dr. Withering observes, that a young man who had been salivated by mercury, and continued in that state for a year, baffling the application of all remedies, was speedily cured by the use of hoarhound tea.

IRISH MOSS.

Fucus Crispus.

1123. This is a sea weed, called also carrageen, which I have found on the Nantasket, Mansfield, and other beaches in Massachusetts. It is thrown up in large clusters by the tides, in July and August, and may be collected in great abundance. The leaves, if they may be so termed, are small, thick, and branched. The moss at first, has a blue, yellow, or darkish tint, but assumes a beautiful white color, on being soaked in fresh water. It is sold in Boston, and other cities, for various domestic purposes. It is manafactured into size, and is sometimes used instead of glue, and isinglass. It makes superior *blanc mange*, the directions for which will be given in a subsequent place. The imported Irish moss was sold at a high price in this country, but is now considered inferior to this article, which may be obtained at a trifling cost.

JUNIPER.

Juniperus Communis—Berries and Leaves.

1124. There are two varieties of the juniper, one of which attains the height of twelve or fifteen feet, while the other is a low shrub, spreading its branches upon the ground, and forming circular beds several rods in circumference.* The latter is peculiar to New England, and is usually found in dry woods, and on stony hills, where the soil is poor, and uncultivated. The leaves are in threes, very numerous, sharply pointed, about a half an inch long, and grooved upon the upper surface. The flowers expand in May, and are succeeded by berries, which do not ripen until the ensuing year, when they assume a dark purple color, and are about the size of a pea.

1125. The medical virtues of the juniper berries depend on a volatile oil, which may be obtained by distillation. It is this oil which imparts to Holland gin its peculiar flavor, and well known diuretic properties. The berries of this country are inferior to those which come from Europe. Caution should be observed, however, in the purchase of the latter, as the refuse berries which have been employed in making gin, are sometimes spuriously vended by the druggists as a genuine article. In some parts of France, the inhabitants steep the berries in water, which they employ in a variety of diseases. In Germany, they put them into sauce which they eat with meat, to give it a flavor.

1126. Properties and Uses. Juniper berries have a sweet, pungent, and aromatic taste, and on being chewed for some time, manifest a slight degree of bitterness. They are a pleasant diuretic, and impart a violet odor to the urine. They may be used to advantage in dropsical complaints, flatulency, and diseases of the urinary passages. The berries may be eaten, or employed in the form of a tea, prepared by steeping two large table-spoonfuls of them, previously bruised, in a pint of boiling water, the whole of which infusion may be taken in the course of twenty four hours. If the oil is employed, the usual dose is from ten to fifteen drops, three times a day. The leaves are also diuretic, but rather more bitter than the berries, and may be used as a substitute.

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* This variety is the *prostrata* of Muhlenberg, and the *depressa* of Eaton. Mr. Nuttall told me he thought Dr. Torrey would make a new species of it in his forthcoming work on botany.

LIFE EVERLASTING.

Gnaphalium Polycephalum—The Herb.

1127. This plant inhabits dry pastures, and neglected fields, and rises to the height of one or two feet. The stem is thickly branched toward the top, and covered with a whitish down. The leaves are long, narrow, acute, waved or irregular along the margin, green above, and wooly beneath. The flowers are of a dull white color, and grow in thick, terminal clusters, making their appearance in July or August.

1128. PROPERTIES AND USES. The herb has a pleasant odor, and an aromatic, and slightly bitter taste. The infusion, taken in warm draughts, produces perspiration, and is useful in colds, fevers, and influenza. It is employed also in fluor albus, and consumption. The leaves and blossoms are in much repute as a fomentation in quinsy, and other forms of sore throat.

MAYWEED.

Anthemis Cotula—The Herb.

1129. The mayweed is an annual plant, growing along roadsides, in old fields, and near towns and villages. It is distinguished by a variety of names, as wild chamomile, stinking chamomile, dilweed, dilly, and fieldweed. The root is small and fibrous. The stem is smooth, round, branching, and a foot or eighteen inches high. The leaves have a ragged or feathery appearance, and consist of little threads or fibres, which are disposed in two rows along a slender footstalk. The flowers are white, supported singly on the tops of the branches, and continue in bloom from an early period in summer until late in the autumn.

1130. PROPERTIES AND USES. Mayweed has a strong, bitter, pungent, and rather disagreeable taste. Its peculiar smell resides in a volatile oil, which is the most concentrated in the flowers. It is usually employed in the form of tea, which should be prepared by steeping the herb in hot water. Drank freely on going to bed, it is an excellent remedy in sudden colds, and slight attacks of disease. It produces a copious perspiration, and is followed, in some instances, by vomiting. The ordinary dose is one or two tea-cupfuls, but if necessary, it may be taken in a much larger quantity.

MEADOW FERN.

Myrica Gale—The Burrs or Seed Vessels.

1131. The meadow fern, sweet gale, or bog myrtle, as this shrub is variously called, is to be found in wet meadows, and about the edges of ponds and streams, where it often grows in large beds or patches. The stem is much branched, from two to five feet high, and covered with a reddish bark. The leaves are narrow at the base, increasing in width toward the end, and bordered with a few remote teeth. During the summer, small buds may be observed to form on the male shrub, which expand about the first of the ensuing May into long, scaly looking flowers. On the fruitful shrub, the flowers present a different appearance, and are succeeded by small green burrs or seed vessels, which grow in clusters upon the branches.

1132. The meadow fern is abundant in Massachusetts and Connecticut, but is rare in many of the other States, although it has a tolerably wide geographical range. A few of the shrubs grow in Bartram's Botanic Garden, near Philadelphia, where I procured specimens for illustration. They were introduced into the garden by Dr. Logan, who obtained them several years ago from New England. The burrs attain their full size about the middle of August, when they should be collected and carefully dried. Rubbed upon the skin, they stain it yellow. The leaves are used in some parts of Scotland instead of hops, for making beer. In Sweden, the inhabitants employ them to cure the itch.

1133. Properties and Uses. The meadow fern burrs have a fragrant odor, and an aromatic, bitter, and pungent taste. Infused in spirit, they make a yellow tincture, which is used in some parts of New England as a tonic or restorative. They are particularly valuable as an external application in itch, poison, and all troublesome humors, or eruptions, and may be employed either in decoction, or as a component part of the *meadow fern ointment.* The decoction, sweetened with honey, and taken in the quantity of a tea-cupful, three times a day, is also beneficial in the above complaints, having the effect to invigorate the stomach, purify the blood, and restore the skin to a healthy tone. I have frequently recommended it as an injection into the urethra, in gonorrhœa, and gleet, and always with good results.

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MULLEIN.

Verbascum Thapsus—The Leaves.

1134. The mullein is a biennial plant, growing by roadsides, and in neglected fields. The root is large, tapering, and somewhat fibrous. The stem is erect, hairy, and from three to ten feet high. The leaves, which gradually diminish in size as they approach the top, are tapering, wooly on both sides, slightly waved along the margins, and prominently veined beneath. The flowers are yellow, blooming from June to August, and thickly crowded upon a long round spike terminating the stem.

1135. Properties and Uses. The leaves of the mullein are mucilaginous and bitter, and are sometimes employed as an emollient poultice. Boiled in vinegar, or bruised, and saturated with rheumatic drops, they may be applied with advantage to offensive sores, swellings, and contracted sinews. A decoction of the leaves, prepared with new milk, and sweetened with sugar, is used as a remedy in diarrhœa and dysentery.

MUSTARD.

Sinapis Nigra—The Seed.

1136. Mustard is an annual plant, and is cultivated in gardens. It also springs up spontaneously in waste grounds, and about houses. The stem is smooth, branching, and three or four feet high. The lower leaves are lobed at the base, and bordered with teeth of various sizes. The upper leaves are narrow, tapering, and smooth along the edges. The flowers are yellow, appearing in June and July, and arranged on long, thread-like receptacles. The seed vessels are erect, four cornered, and bluntly pointed.

1137. Properties and Uses. Mustard, when reduced to a powder, has a pungent smell, and an acrid, fiery taste. Mixed with water, it is much used as a condiment. It does not appear, however, to be a very pure stimulant. Beaumont, in his experiments on St. Martin, found that it produced a morbid condition of the stomach, and retarded the process of digestion.* This may not uniformly be the case, but experience has proved

* Beaumont's Experiments, p. 242. Plattsburgh, 1833.

that the internal use of it is rather injurious than otherwise. A large tea-spoonful of the powder, mixed with warm water, acts promptly as an emetic. Applied to the skin in the form of a poultice, it causes redness and burning pain, the latter of which usually becomes insupportable in less than an hour, and if the poultice be continued beyond this time, it is apt to be "followed by severe local inflammation, which frequently ends in gangrene, and may even destroy the patient."*

PENNYROYAL.

Hedeoma Pulegioides—The Herb.

1138. This is a well known annual plant, which grows in dry fields and pastures, and is common throughout the United States. The root is small, yellowish, and fibrous. The stem is erect, hairy, a foot or more high, and very branching. The leaves are small, acute, somewhat hairy, bordered with a few remote teeth, and supported on short footstalks. The flowers are small, of a pale blue color, arranged in whorls around the stem and branches, and continue in bloom from July to September.

1139. Properties and Uses. Pennyroyal has a pungent and aromatic taste. Its active properties reside in a volatile oil, which may be procured by distillation. The infusion is warming and grateful to the stomach, and is useful in allaying nausea and vomiting. In large draughts, it promotes perspiration. Taken freely on going to bed, it is an excellent remedy for a sudden cold, or slight attack of disease. Combined with cayenne, it may be given with great advantage in obstruction of the menses, and hysterical complaints. It affords relief in flatulency, and pains of the stomach and bowels, and for this purpose may be given freely to children. It is an excellent drink, also, during a course of medicine. A tea-spoonful of the essence, or a few drops of the oil, may be advantageously employed to correct the taste of unpleasant medicines. The herb put into water which has become unwholesome during a sea-voyage, will give it an agreeable flavor, and render it less injurious to the system.

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* Eberle's Therapeutics, 4th edition, vol. ii. p. 264.

PEPPER SAUCE.

Pods of the Capsicum steeped in Vinegar.

1140. Pepper sauce is made of the West India bird peppers, which are collected when green, and packed in barrels, with salt sufficient to preserve them. When they arrive in this country, they are taken from the brine, put into bottles, and covered with good cider vinegar, which constitutes the pepper sauce. If the peppers are of a good quality, and have been well preserved, vinegar may be applied to them a number of times, before their strength will be exhausted.

1141. PROPERTIES AND USES. Pepper sauce, though hot or fiery in the mouth, has a pleasant taste. It is an excellent condiment, and gives a fine relish to meat, and other articles of food. A table-spoonful several times a day, will generally relieve costiveness. In dyspepsia, coldness of the stomach, flatulency, loss of appetite, ague and fever, pain in the bowels, and a chilly, or languid state of the system, it is highly beneficial. If the food causes distress, a table-spoonful of it will in most cases afford relief. It is also a valuable external application in pains, swellings, bruises, and gouty, or rheumatic affections.

PIPSISSEWA.

Pyrola Umbellata—The Roots and Leaves.*

1142. This is a small evergreen plant, known by a variety of names, as umbelled wintergreen, prince's pine, king's cure, green leaf, rheumatic weed, and ground holly. It has a yellowish, creeping root, which forms a net-work just beneath the surface of the ground, and sends up stems at various distances. These are somewhat angular, rough with the scars of preceding leaves, and six or eight inches high. The leaves vary from one to two inches in length, and are tapering at both ends; they are firm and thick, edged with acute teeth, of a dark, shining green upon the upper surface, paler beneath, and disposed in irregular whorls, of which there are generally two on the same stem. The flowers are of a white color, tinged with red, supported on nodding footstalks, which rise two or three inches above the leaves. The seed-vessels

* The *chimaphila umbellata* of Pursh, Eaton, and Barton.

are roundish, divided into five cells, and contain a large number of minute seeds.

1143. The pipsissewa is found in all parts of the United States, growing in dry woods, and on mountainous ranges shaded by trees. The flowering season is June and July. It is much in use as a domestic remedy, and was employed by the aborigines in a variety of complaints, especially rheumatism. It should be collected early in the spring, or late in the autumn, as the leaves become of a dark color in drying, and lose a portion of their strength.

1144. Properties and Uses. The root of the pipsissewa has an astringent, sweetish, and bitter taste, succeeded, on being chewed, by a pungent or biting sensation, which continues in the mouth for two or three hours. The plant is tonic, diuretic, and in some degree a nervine. A decoction of the fresh bruised roots and leaves, is employed in cancers, scrofulous tumors, dropsy, rheumatism, and diseases of the urinary organs. Where the powder is the most convenient form of the medicine, a teaspoonful of it may be administered at a dose, steeping it in hot water, and repeating it two or three times a day. Sugar may be added to suit the taste. The decoction is an excellent wash for offensive or badly conditioned sores. I have frequently employed pipsissewa, in combination with other articles, as an alterative or purifying medicine, but am inclined to think that it is too acrid for internal use. The leaves, it will be remembered, if applied externally in the form of a poultice, will irritate the skin, and produce a blister.

PRICKLY ASH.

Zanthoxylum Fraxineum—The Bark and Seed Vessels.

1145. The prickly ash or toothach bush is a shrub, rising to the height of ten or twelve feet. It is covered with a grayish or ash colored bark. The branches are armed with scattered prickles, which grow singly, or in pairs. The leaves are arranged in two rows along the sides of a footstalk, with an odd and generally a larger one at the end; they are an inch and a half or two inches long, with prominent veins beneath, and an acute, tapering point. The footstalk is sometimes prickly, and sometimes unarmed. The flowers are small, and of a yellow color, growing in little clusters close to the branches. They appear in May, in advance of the leaves. The seed vessels have the appearance of small berries, and during the summer change from a

Prickly Ash. Zanthoxylum Fraxineum.

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green to a red; in the autumn, they assume a brownish color, and open by three valves, exhibiting a black, polished seed in the centre.

1146. The prickly ash is found in the Northern, Middle, and Western States, inhabiting woods, and moist shady places. It appears to be rare in Massachusetts. The only specimen of it which I have seen, was in West Cambridge, near the dwelling house of Mr. Nathaniel Hill. Dr. Bigelow, however, speaks of a thicket of the shrubs which he accidentally discovered in a wood near Medford, six miles from Boston. The prickly ash is sometimes confounded with the *aralia spinosa* or *angelica tree*. The latter has a yellowish bark, with leaves arranged upon a dividing footstalk, and flowers disposed in large, spreading clusters.

1147. Properties and Uses. The seed vessels have an aromatic taste, and on being chewed for some time, produce a burning sensation in the mouth, which continues for a quarter or half an hour. The bark of the stem and root is also pungent, but in an inferior degree, and has a slightly bitter taste. The seed vessels are very strong and active in the recent state, but their power is greatly diminished by keeping.

1148. Prickly ash warms and invigorates the stomach, strengthens the digestive powers, and promotes a free perspiration. It is an approved remedy in ague and fever, rheumatism, pains in the stomach and bowels, dyspepsia, drowsiness, cold hands and feet, and all affections dependent on a sluggish circulation. Half a tea-spoonful of the powdered bark, or seed vessels, steeped in two thirds of a tea-cupful of sweetened water, may be taken at a dose, and repeated two or three times a day.

1149. The seed vessels are employed to flavor the *wine bitters*, and other medicines.

1150. The bark of the prickly ash is sometimes chewed to relieve the toothach, and hence the name of *toothach bush*. A species of the shrub grows in the West Indies, which is used in decoction, both internally and externally, for the cure of malignant sores.

1151. Carver, who travelled among the North American Indians, in 1740, says that they make much use of the prickly ash. They prefer the bark of the root, which they steep in boiling water. He relates the case of a trader, who was violently attacked with gonorrhœa, and was soon unable to travel. Application was made to an Indian chief, who promised a speedy and effectual cure. He prepared a tea of the prickly ash bark, by the use

of which, great relief was afforded in a few days, and in a fortnight the trader was perfectly cured, and enabled to pursue his journey.*

PEPPERMINT.

Mentha Piperita—The Herb.

1152. The peppermint is a native of Great Britain, but has been introduced into this country, and is common throughout the United States. The root is creeping and fibrous. The stems are erect, four cornered, channeled, purplish, somewhat hairy, branched toward the top, and from one to two feet high. The leaves are tapering, somewhat wrinkled, hairy, edged with acute teeth, and supported on short footstalks. The flowers are of a purple color, and appear in August, arranged in blunt, terminal spikes.

1153. The peppermint prefers a wet or damp situation, and is usually found in meadows, and along the margins of streams. It is extensively cultivated in some parts of the United States for its volatile oil, which is in popular use as a domestic medicine. It has been observed, however, that it requires to be transplanted every three years, or it degenerates in quality, and becomes little better than spearmint.

1154. Properties and Uses. Peppermint has a pleasant odor, and a pungent, aromatic, and somewhat bitter taste, accompanied with a remarkable sensation of coolness. The infusion promotes perspiration, and may be usefully employed in colds, flatulency, pains in the stomach and bowels, headach, nausea, and vomiting. A tea-spoonful of the essence in warm water, sweetened, may be used as a substitute for the tea. Dropped on loaf sugar, also, the essence is very grateful to the stomach, and is a convenient form of the medicine for children.

RED CLOVER.

Trifolium Pratense—The Blossoms.

1155. Red clover is too well known to need a description. The blossoms boiled in water, until a strong decoction is procured, and the liquid simmered over a slow fire until it becomes

* Carver's Travels, p. 369.

about the consistence of tar, forms the *cancer plaster* of Dr. Thomson, which has gained so much reputation in the cure of cancers, burns, and various ill conditioned sores. The particular mode of preparing the plaster will be described hereafter among the compounds.

SARSAPARILLA.

Aralia Nudicaulis—The Root.

1156. This plant is called wild sarsaparilla, false sarsaparilla, and small spikenard. It is found in woods and thickets, from Canada to Carolina, delighting in a rich soil. It has a perennial, creeping root, about as thick as the finger. The stem is one or two feet high, and divides into three branches, each of which is furnished with three, or five leaves. These are roundish at the base, acute at the point, and bordered with fine teeth. The flowers are of a yellowish or greenish color, appearing in May or June, and disposed in clusters at the top of a naked stem, which does not rise so high as the leaves. The fruit consists of berries about as large as those of the common elder.

1157. PROPERTIES AND USES. Sarsaparilla is a gentle stimulant, and in infusion or decoction, is capable of exciting perspiration. It is a popular remedy in scrofula, chronic rheumatism, syphilis, diseases of the skin, and mercurial salivation. It is given also in coughs, and affections of the lungs, but I have known it to do more injury than good in these complaints. It is generally used in the form of sirup, but may be employed in decoction, sweetened with sugar, or honey. The Indians apply the roots, in the form of a poultice, to wounds, and ulcers.

SKUNK CABBAGE.

Ictodes Fœtidus—The Root.*

1158. This plant, known also by the name of fetid hellebore, is the product of swamps, and wet or damp meadows. It has an offensive odor, resembling that of the animal after which it is named. The root is as large as one's wrist, and gives off numer-

* This plant has various generic names, as *pothos*, *symplocarpus*, and *dracontium*.

ous horizontal fibres, which creep through the wet soil or mud to the distance of one or two feet. The flowers appear in March or April, before any other part of the plant, covered by an appendage somewhat in the shape of a boat, which is generally of a purple color, variegated with spots of yellow and green. The leaves are numerous, very large, and grow from the root on long footstalks, which are grooved or hollowed in front.

1159. The skunk cabbage is abundant throughout the Northern and Middle States. The root should be collected early in the spring, or in the autumn after the leaves have decayed. It loses a portion of its strength by drying, and after the first season becomes almost inert.

1160. PROPERTIES AND USES. The root has a pungent or fiery taste, which becomes very painful to the mouth and lips, and continues for several hours. The powder is given to children in half tea-spoonful doses, to cure the worms, and to adults in double the quantity, two or three times a day, as a remedy in asthma, coughs, and diseases of the lungs. Mixed thoroughly with molasses, or honey, it may be swallowed without much inconvenience from its pungency.

1161. Dr. Thomson formerly employed the root in his cough powder, but he has now entirely laid it aside, and desired me to omit a notice of it in the new edition of his work. It is a narcotic, and cannot always be used with safety. The United States Dispensatory says, "In large doses it occasions nausea and vomiting, with headach, vertigo, and dimness of vision." Dr. Bigelow asserts, that these effects are produced by thirty grains of the freshly powdered root, which is about a tea-spoonful.

SLIPPERY ELM.

Ulmus Fulva—The Inner Bark.

1162. The slippery elm, called also red, and sweet elm, is found in almost every part of the United States, preferring a dry soil, and an open, elevated situation. Michaux observes that it is the most abundant in Ohio, Kentucky, and Tennessee. It rises to the height of forty or fifty feet, with a diameter of fifteen or twenty inches. The leaves are hairy and rough on both sides, terminated by a long, slender point, and bordered with acute, double teeth, which are slightly hooked at the ends. A fortnight previous to the development of the buds, they are covered with a dense, yellowish wool. The flowers appear in April,

Slippery Elm Ulmus Fulva

in advance of the foliage, and grow in clusters upon the ends of the young shoots.

1163. The bark of the elm should be procured in the spring, just as the sap begins to rise, as it can then be detached without difficulty. The mode of drying it, is the same as that recommended for the poplar bark. (890.) When of a good quality, it is brittle, and highly mucilaginous. It is sometimes adulterated with the bark of the *white elm*,* which is tough, fibrous, and of but little value in medicine.

1164. Properties and Uses. Slippery elm bark abounds in mucilage, which is readily extracted by water. It is very nutritious, and has supported life in the absence of other food. Dr. Strong mentions the case of a soldier who lost his way in the woods, and subsisted entirely on this bark, and the bark of sassafras, for ten days. The inhabitants of Norway, according to Dr. Cutler, use it in making bread, when there is a scarcity of grain. It is a nourishing article of diet, and may be given advantageously to feeble or emaciated patients, particularly those in consumption. The infusion is of great value in diarrhœa, dysentery, coughs, pleurisy, strangury, sore throat, and inflammation of the stomach and bowels. It produces a soothing effect throughout the whole system. In dysentery it is particularly beneficial. Dr. Eberle acknowledges, that in this complaint it has effected a cure when all other remedies were unavailing. He seldom prescribed for the disease, without ordering it to be taken in copious draughts.†

1165. The following preparation of elm is an excellent remedy in coughs. Take half a tea-spoonful of cayenne, a tea-spoonful of powdered elm, and two or three tea-spoonfuls of loaf sugar; rub them together, and add a tea-cupful of hot bayberry tea; stir until a jelly is formed, and flavor with nutmeg, cinnamon, or some other spice. A tea-spoonful of this jelly may be taken whenever the cough is troublesome.

1166. A table-spoonful of powdered elm, boiled in a pint of new milk, affords a nourishing diet for infants, weaned from the breast. It prevents the bowel complaints to which they are subject, and renders them fat and healthy.

1167. Slippery elm is a prominent ingredient in poultices, as will be specified hereafter. In diarrhœa, dysentery, tenesmus, and piles, it is also an important addition to the injections. For further information respecting the different preparations of elm, the reader is referred to the index.

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* *Ulmus Americana.*

† Eberle's Therapeutics, 4th edition, vol. ii. p. 453.

SPEARMINT.

Mentha Viridis—The Herb.

1168. The spearmint is abundant throughout the United States, growing in meadows, and low damp ground. The root is creeping, and fibrous. The stems are erect, branching, four cornered, and one or two feet high. The leaves are without footstalks, narrow, tapering, sharp at the point, and bordered with acute teeth. The flowers are small, of a light purple, and disposed in scattered whorls upon long slender spikes.

1169. This plant is extensively cultivated in some parts of the United States for the sake of its volatile oil. The essence, prepared by the druggists, is frequently mixed with turpentine, and if employed internally, will sometimes occasion strangury, and a burning sensation in voiding urine. The herb should be collected in clear, dry weather, just as the blossoms are beginning to expand.

1170. Properties and Uses. Spearmint has a pleasant, aromatic odor, and a pungent, agreeable, and slightly bitter taste. It is a stimulant, and tonic, and will strengthen and invigorate the stomach. The infusion is used to allay nausea and vomiting, for which it sometimes answers an excellent purpose, though it is by no means a specific, as Dr. Thomson seems to imagine. It is also beneficial in pains of the stomach and bowels, and to expel wind. The essence, in the dose of a tea-spoonful, mixed with sweetened water, may be used instead of the tea. This form of the medicine is very beneficial in the bowel complaints of children, and will often effect a speedy cure. Cotton or lint, moistened with the essence, and applied to piles, will usually give immediate relief. I have recommended the remedy in a number of instances, where the patient was threatened with an attack of the piles, and never knew it to fail in removing the complaint. The application may require to be repeated two or three times. It produces a pungent sensation, which becomes very painful in fifteen or twenty minutes, when it may be removed.

SPICY WINTERGREEN.

Gaultheria Procumbens—The Leaves.

1171. This pretty little evergreen is found in pine woods, and on hills and mountains, beneath the shade of trees. It is scattered over the country from Canada to Georgia, and grows in

Spicy Wintergreen Gaultheria Procumbens

Sharp, Michelin & Co 17 Tremont Row

large beds, delighting in a dry, cold soil. It is known in different places by the names of partridge berry, deer berry, box berry, grouse berry, and mountain tea. It is also called chequer berry, but this name more properly belongs to the *mitchella repens*, which has a creeping stem, and small round leaves, about the size of the finger nail.

1172. The spicy wintergreen has a creeping root, and small, round stems, of a reddish color, and four or five inches high. These are crowned at the summit with a tuft of unequally sized leaves, which are tapering at both ends, and bordered with a few minute teeth, terminating in bristly and scarcely perceptible points. The flowers are white, drooping, and contracted at the mouth, appearing from June to September. The berries are red, about the size of a pea, and of a spicy and agreeable taste.

1173. The spicy wintergreen is well known for its fragrant oil, which it yields in a small quantity by distillation. The berries remain on the plant until late in the spring, when they are collected by people in the country, and sent to market, or used for domestic purposes. They have the reputation of being a diuretic, and are frequently employed for that purpose. They are also given to children, in milk, sweetened with sugar, or molasses, to regulate the bowels. They are eaten with avidity by partridges, deer, rabbits, and various other kinds of game, and it is said they impart a fine flavor to their flesh. A cordial of an agreeable taste is made from the berries and leaves, which is employed, among other things, in diseases of the urinary organs.

1174. Properties and Uses. This plant is aromatic, and somewhat astringent. The infusion, prepared by steeping the leaves in hot water, and adding a portion of sugar and milk, is pleasant to the taste, and invigorating in its effects, being preferred by some people to common table tea. It is also a useful remedy in diarrhœa, and the bowel complaints of children. The United States Dispensatory says, the spicy wintergreen has been employed with a view to increase the secretion of milk, but this is probably a wild and foolish conjecture. The oil closely resembles that of the black birch in taste, and odor, and is used to flavor medicines, and impart a scent to the *headach snuff*.

SUMMER SAVORY.

Satureja Hortensis—The Herb.

1175. The summer savory has a small, tough, fibrous root, sending up an erect, somewhat hairy stem, which is thickly

branched, often of a purplish color, and a foot or eighteen inches high. The leaves are acute, narrow, of a dark green color, and from a half to three quarters of an inch in length. The flowers are small, and of a light purple, growing along the stem and branches somewhat in the form of whorls, and making their appearance in August and September.

1176. Summer savory is cultivated in gardens for culinary purposes; and it is also used by people in the country as a remedy in colds, and slight attacks of disease. Within a few years, it has been sold extensively as an article of medicine.

1177. Properties and Uses. This excellent little herb has a sharp, pungent, and aromatic taste. Its active properties reside in a volatile oil, which may be separated by distillation. The infusion warms and invigorates the stomach, promotes perspiration, and if taken at bed-time, will usually arrest a sudden cold, or slight febrile attack. It may also be used as a drink during the operation of an emetic. The water, which is left after distillation, will answer all the purposes of the infusion. It is hot and penetrating to the taste, and a very active stimulant. It may be preserved in bottles a long time, by adding a pint of brandy to the gallon. The oil dropped on cotton, or lint, and inserted into a carious tooth, will often afford relief.

TANSY.

Tanacetum Vulgare—The Herb.

1178. Tansy has a woody, creeping, fibrous root. The stems are erect, slightly grooved, two or three feet high, and branched toward the top. The leaves are formed by a number of narrow leaflets, arranged in two rows along a common footstalk, and divided into small lobes, which are bordered with acute teeth. The flowers are yellow, and grow in thick clusters at the tops of the branches.

1179. The tansy is cultivated in gardens, and grows wild by roadsides. It remains in bloom from July to September. The leaves dye green, and the flowers yellow. In some parts of Sweden and Lapland, a decoction of tansy is employed in the form of a bath, to assist in child-birth. The odor of the plant is much diminished by drying.

1180. Properties and Uses. The tansy has a strong, penetrating odor, and a bitter and pungent, though not disagreea-

ble taste. It is moderately stimulant, and tonic. The country people infuse it in rum, and employ the tincture, thus prepared, to give them an appetite, taking half a wine-glassful in the morning before breakfast. The practice, however, often leads to intemperance, and is therefore objectionable. The infusion of tansy is usefully employed in nausea, indigestion, hysteria, suppression of the menses, strangury, and weakness of the kidneys. It is also given to children afflicted with worms. The powdered leaves, warmed or heated by the fire, are an excellent application for sprains and bruises, tending to allay the pain, and diminish the swelling.

UNBOLTED WHEAT BREAD.

1181. It may appear somewhat novel to mention bread as an article of the materia medica, but believing as I do, that, when properly prepared, it is of inestimable value, both as food and medicine, I cannot refrain from giving it a place. If there is any one thing comprised in our daily food more injurious than another, it is the bread made of superfine flour, and it is often rendered still more pernicious by the addition of alum, pipe clay, plaster of paris, blue vitriol, and many other injurious or poisonous substances, employed by the bakers. It gives rise to costiveness in its most obstinate form, and with this springs up the ten thousand diseases with which poor human nature is afflicted. People then avail themselves of Brandreth's pills, or some other purgative, hoping thereby to obtain relief, and thus they go on from week to week, and from month to month, eating the white bread, and irritating the bowels with physic, until they finally sink into the grave. Near the close of the last century, owing to a scarcity of provisions, eighty thousand English soldiers were fed on bread made of unbolted meal, and such were its effects, that the officers and physicians of the army declared the soldiers were never before so healthy and robust—and that disease of every kind had almost disappeared from among them.*

1182. The inhabitants of Westphalia, says a writer in Ree's Cyclopedia, are a living testimony to the salutary effects of this sort of bread—and it is remarkable that they are very seldom attacked by acute fevers, and those other diseases which arise from bad humors.

1183. Magendie, says a medical writer, tried the experiment of feeding dogs upon white bread and water, but all the animals

* Science of Human Life, *vide* Memoirs of the Philadelphia Agricultural Society, vol. i.

died within fifty days, whilst those to whom he had given household bread, which only differed from the white bread by retaining a quantity of the bran, continued to thrive upon it very well. It is remarkable, that one of the dogs which died, had been put upon his usual diet between the fortieth and forty fifth days, but nothing could save him from the fatal effects of the white bread.

1184. The great objection to the bread manufactured from fine wheat flour, is, that it is too concentrated, and requires the bran or innutritious part of the grain, to adapt it to the peculiar wants of the system. Man cannot long subsist upon highly concentrated food. Magendie, already quoted, ascertained that animals fed exclusively on butter, or fat, presented a *fatty* state of the liver after death. He also fed dogs on sugar and water, and found that they soon drooped, became emaciated, diseased with ulcers, and usually died in about a month. "Children," says the author of the Science of Human Life, "whose food consists for a considerable time of superfine flour bread, and other concentrated substances, as sugar and butter, generally become weak and sickly, and are often covered with sores—but by putting them on a diet of good bread made of unbolted wheat meal, with milk and water, or pure soft water for drink, allowing them also to indulge freely in the use of good fruits in their season, none of the evils which result from concentrated forms of aliment will be experienced, and if properly treated in other respects, they will be perfectly healthy, robust, and sprightly."

1185. I have been the means of introducing the unbolted wheat bread into a large number of families, and always with the best results. Persons who have been costive for years, have been relieved of it in a week or fortnight, and oftentimes in two or three days. I scarcely ever knew it to fail, and have recommended it in a great number of cases. By continuing the use of it as an article of food, it will keep the bowels regular, unless the habits of the individual, and the gross abuse of his digestive organs, are such as to counteract all its good effects. In piles, and sick headach, it is a remedy of great importance. In the latter disease it is necessary that tea, coffee, butter, and all animal fats be avoided.

1186. If those who are in the habit of drugging themselves with physic, would make use of the unbolted wheat bread, eating a clever slice at each meal, they would cease to complain of costiveness, and find themselves gaining strength, and becoming every day more healthy and vigorous. It has been objected to the bread, however, that it irritates the bowels, and acts as a purgative. This is a mistake, for the bran is soothing to the bowels, and unlike physic, does not leave them ultimately in a

torpid or inactive state. Besides, it produces natural stools, and not the copious or watery discharges which follow the administration of a purgative. In some instances, however, if the bowels are in a very disordered state, the stools may be more frequent than natural, but this will only continue for a limited time; and the bread, under such circumstances, may be taken in a smaller quantity, or eaten in conjunction with rice, tapioca, or some similarly concentrated article of diet.

1187. It was my lot to be obstinately costive for many years, which I endeavored to remove by small doses of bitter root, and other purgatives, but being dissatisfied with the effect, I employed courses of medicine, which, however, afforded me temporary rather than permanent relief; at length I changed my mode of living, eating the unbolted wheat bread, and subsisting principally on vegetable food, taking a little lean meat now and then, when I felt a desire for it, and from that period, which was more than two years since, I have not been troubled with the malady in the slightest degree. (954.)

1188. *Making the Bread.* The wheat should be of good quality, cleansed from dirt and all impurities, and ground with sharp stones to cut the bran fine. After the flour is thus prepared, the bread is to be made with good yeast, and baked so as to be light and sweet. It should not be eaten until twelve hours after it is baked, for every body knows that warm bread, cakes, and every thing of the kind, are highly pernicious.

1189. Bread made as follows, is light and wholesome, and has the sweet and peculiar taste of the wheat in its natural state. Take of the unbolted meal any desirable quantity, adding salt to your wish, and make it into a stiff dough with milk somewhat sour or changed, which has been previously sweetened by the addition of sal æratus. It is better to dissolve the sal æratus in warm water before it is used, and no more should be put into the milk than is necessary to give it a sweet taste. If any sourness remain in the milk, it will cause the bread to be heavy. As soon as the dough is put into the pan, preparatory to being baked, a case knife should be plunged through it to the bottom, cutting across two thirds of the mass. This prevents the loaf from becoming solid in the middle. The bread will be more light by allowing the dough to stand fifteen or twenty minutes before putting it into the oven.

1190. Bread thus prepared is fit for the table of an emperor, and besides being nourishing, and easy of digestion, is one of the best medicines in the world. It is not necessary, however, that

sal æratus should be used in its preparation, for good milk and yeast are quite sufficient to render it light and sweet.

1191. Persons with dyspepsia should eat the unbolted wheat bread at every meal. It excites the secretion of saliva, and leaves the mouth moist, whereas the fine wheat bread often dries the mouth, and can scarcely be swallowed without frequent draughts of tea, coffee, or other drink. It is delicious to the taste, and with new milk, boiled, and thickened with fine flour, adding cream if desirable, it makes superior toast, which is excellent for persons recovering from sickness. The bread cut into thin slices, and toasted until quite hard and brown, affords an excellent coffee, especially when boiled with sugar and milk. There is no beverage more delicious and nourishing. I know of many families who use it instead of the ordinary tea and coffee, and they find it much better for their health.

1192. Those who cannot obtain the unbolted wheat bread, as a means of regulating their bowels, should substitute some of the preparations of Indian corn. Dr. Alcott, speaking of this grain, says, "it is one of the most wholesome articles for human sustenance in the known world; and it may justly be doubted whether the exclusive use of any other article, except wheat, would be so well adapted to develope our whole nature—physical and moral—as this substance. It forms a large proportion of the food of many individuals, and even of some whole tribes of men; and there is nothing against the belief, that if used in a proper manner, it would impart full vigor of body and mind, and an unusual degree of health and longevity."* Rye bread is also a very wholesome article of diet, when made of the entire substance of the grain, but it is not considered quite so good as either the wheat, or corn bread. Dr. Alcott says, "In many parts of New England, it forms a very large proportion of the ordinary diet."

VINEGAR.

Acetic Acid.

1193. Vinegar is prepared by allowing cider, wine, or malt liquor, to undergo what is termed the acetous fermentation. Very good vinegar may be procured by dissolving sugar in water, adding a little yeast, and exposing it to a temperature of 80 or 90 degrees of Fahrenheit, so that it may undergo the process of fermentation.

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* Young Housekeeper, p. 117.

1194. Vinegar, if kept for a long time, is liable to become ropy or muddy, but may be purified by adding powdered charcoal to it, or by boiling a few minutes, and putting it into bottles, corking them closely. It may also be purified by distillation.

1195. Properties and Uses. Vinegar is appropriated to a variety of domestic, and other useful purposes. It is a valuable antiseptic, resisting putrefaction in a remarkable degree; and is an antidote to the alkalies, when taken in an over dose. It is often burnt in sick rooms, under an impression that it will purify the air, but it only covers an offensive smell by its agreeable odor, without removing the vitiated particles of the air. Diluted with water, it is beneficial in cleansing the eye from lime dust. The vapor or steam of vinegar, is an excellent remedy in putrid sore throat, and dry, consumptive coughs. It is to be inhaled by means of a blanket thrown over the head, taking care that the vapor is not so hot as to injure the lungs.

VIRGINIAN THYME.

Pycnanthemum Virginicum—The Leaves and Flowers.*

1196. The Virginian thyme, high pennyroyal, or flax-leaved basil, grows on the banks of streams, in thickets, and on the borders of damp, open woods. It blossoms in June or July, and varies from two to three feet in height. The stem is upright, hairy, somewhat rough, and gives off short, opposite branches. The leaves are an inch or an inch and a half long, narrow, tapering, pointed, and without footstalks. The flowers are white, and disposed in a spreading and somewhat flattened cluster, at the tops of the stem and branches.

1197. Properties and Uses. This plant has almost precisely the odor and taste of pennyroyal, and may be used for similar purposes. It is a warming stimulant, and makes a pleasant tea. The dried flowers are much more active and pungent than the leaves. The only objection to the plant is, that the leaves are small, and few in number, and cannot be collected in any considerable quantity.

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* Eaton.

WAKEROBIN.

Arum Triphyllum—*The Root.*

1198. This plant, variously called Indian turnip, pepper turnip, and dragon root, is common in almost every part of the United States, growing along ditches, and in moist, shady places. The root is similar in shape and appearance to that of the onion, and is about an inch in diameter, giving off a circle of fibres at its upper edge. The stem is round, spongy, and from one to three feet high, usually divided about midway into two branches, each of which is surmounted by three leaves. These have a narrow base, and a slender, acute point, but in other respects they vary in shape, some being roundish, and others four sided, with unequal angles. The flower is supported at the top of a footstalk, which rises from between the branches containing the leaves. It consists of a tube about two inches long, terminating on one side in a leaf-like appendage, which bends over like a hood, and tapers to an acute point. The color, internally, is sometimes green, but it generally consists of a purple ground, variegated with white lines. The flowering period is June. The fruit is a compact cluster of berries, which are green at first, but subsequently change to a beautiful scarlet.

1199. The root may be preserved for several months in the green state, by burying it in sand, and placing it in a cellar. Boiled, or roasted, it may be eaten with impunity, notwithstanding its acrimony, and is considered by some people an excellent article of food.

1200. Properties and Uses. The green root of the wakerobin has an intolerably pungent and fiery taste, which continues in the mouth and throat for several hours, causing the tongue to swell, and leaving an unpleasant soreness. Applied to the skin, however, it is not followed by pain, or even redness. Its properties are imperfectly yielded to water, and alcohol, and should therefore be employed in substance, by those who esteem it as a remedy. When dried and pulverized, it loses its acrimony, and soon becomes almost tasteless.

1201. Dr. Thomson formerly employed the wakerobin in coughs, and diseases of the lungs, administering half a teaspoonful of the powdered root, recently dried, in honey or molasses, two or three times a day, but he found it to be so acrid or irritating, that he judiciously laid it aside. It is nevertheless a valuable external application in poison from ivy, or dogwood; and in several severe cases which came under my observation, it af-

forded speedy and entire relief. The fresh root should be cut into slices, and rubbed upon the part affected three or four times a day, until a cure is performed. The powder, mixed with cream, may be applied in substance, instead of the green root.

WILD CHERRY.

Prunus Virginiana—Inner Bark and Fruit.*

1202. The wild cherry is one of the largest productions of the American forest. On the banks of the Ohio, where it is fully developed, it attains the height of eighty or one hundred feet, with a trunk measuring twelve or sixteen feet in circumference. In the Atlantic States, however, it is of much smaller growth. In open situations, observes Mr. Eaton, the limbs spread into an elegant oval summit, but in dense forests it grows to a very great height, with only a few contracted branches. The young trees are covered with a reddish bark, but as they advance in age, it assumes a darker appearance, and detaches itself semicircularly in thick, narrow, transverse layers. The leaves are tapering at both ends, sharply pointed, bordered with fine teeth, smooth and polished on both sides, and supported on long footstalks, each of which is furnished with two, or four little protuberances on its upper side.

1203. Properties and Uses. The inner bark of the wild cherry has a spicy and bitter taste, with some little astringency. It loses its strength by keeping, and should, therefore, be employed in the recent state. Either hot or cold water extracts its sensible properties, affording a reddish colored infusion. Its virtues are impaired by boiling. From its taste and odor, says the United States Dispensatory, it has been supposed to contain prussic acid, but the presence of this principle has not been demonstrated. Dr. Wood, one of the authors of the Dispensatory and now Professor of Materia Medica in the Pennsylvania University, is in the habit of saying to his class, as I have already observed, that the bark of the wild cherry tree is devoid of prussic acid in its natural state, and that this product results from chemical action during distillation. (911.)

1204. This bark is an agreeable tonic, and is used in dyspepsia, ague and fever, diarrhœa, worms, jaundice, and female obstructions, when more efficient remedies are not at hand. It is

* The *cerasus virginiana* of Michaux.

usually employed in infusion, which may be prepared by adding an ounce of the powder, to a quart of water or cider, and allowing it to steep for twelve hours. A wine-glassful of this may be taken three or four times a day.

1205. The cherries of this tree are also used in medicine, and may be employed indiscriminately with the peach kernels. (910.) Bruised, and steeped in hot water, with the addition of loaf sugar, they are useful in promoting appetite and digestion. They also afford the *cherry spirit*, which is so well known for its agreeable flavor.

WILD LETTUCE.

Pyrola Rotundifolia—The Roots and Leaves.

1206. This is a modest little evergreen, with a slender, creeping root, and small angular stems, one or two inches high, and channelled upon the upper side. Each of these is surmounted by a roundish leaf, about two inches in diameter, with a number of small, prominent veins upon the upper surface, which are sometimes of a milky color. The flowers are white and fragrant, supported at the top of a footstalk rising six or eight inches in height.

1207. The wild lettuce is very common in pine woods, and on hills and mountains, growing beneath the shade of trees. It is generally found in the same locality with *pipsissewa*, to which it is closely allied in medical properties. The flowering period is June. In some sections of the country it is called *consumption weed*, and *round leafed wintergreen*.

1208. Properties and Uses. The root, in addition to a slight degree of astringency, is pleasantly bitter and aromatic, with a good deal of pungency. The leaves are also bitter, but do not possess any of the other properties of the root. The decoction is useful internally as a remedy in rheumatism, gravel, dropsy, and diseases of the skin; and externally as a wash for cancerous and scrofulous sores. Dr. Thomson states, that he cured a woman of the dropsy, by using the wild lettuce, bruised and steeped in hot water. He also observes that the roots of this plant, and the pipsissewa, in equal parts, are an excellent remedy for weak nerves. The dose is a tea-spoonful of the powder, administered two or three times a day.

WORMWOOD.

Artemisia Absinthium—The Herb.

1209. This plant has a large, woody, fibrous root, which sends up numerous erect, furrowed, branching stems, rising two or three feet high. The leaves are divided into several obtusely pointed lobes, which spread out somewhat like the fingers of the open hand, and in common with the stem and branches, have a white or mealy appearance. The flowers are small, nodding, and of a greenish yellow color, supported on the branches by short footstalks.

1210. Wormwood grows wild by roadsides, among rubbish, and is cultivated in gardens. The flowering period is July and August. Few plants are more disagreeable to the taste, and hence its specific name, *absinthium*, which signifies unpleasant. Pliny speaks of it as a remedy for the itch, and observes also that it will heal old sores. The odor of the plant depends upon a volatile oil, which may be obtained by distillation. This is sometimes rubbed on the skin as a safeguard against troublesome insects. The green herb is used to preserve clothes from moths and worms. The fresh leaves are put into sour beer to correct its unpleasant taste. Dr. Cutler observes, that if women who suckle take an infusion of this plant, it imparts a bitter taste to the milk.

1211. Properties and Uses. Wormwood is nauseous and exceedingly bitter. It is used successfully as a tonic in loss of appetite, and debility of the digestive organs. Previous to the introduction of Peruvian bark, it was employed by the medical faculty as a remedy in ague and fever. The flowers are more aromatic and less bitter than the leaves, and have a slightly pungent taste.

1212. Wormwood is a valuable antiseptic, and in the form of a poultice may be usefully employed in wounds, or sores that have become offensive. Parkinson, who published a work on plants about two centuries ago, says, that "wormwood will cure the pain of sore and running ears, if the warm vapor of the decoction be introduced into them by a funnel." The tincture is beneficial in bathing sprains and bruises, having the effect to allay the pain, and prevent swelling and discoloration.

YARROW.

Achillea Millefolium—The Herb.

1213. Yarrow is a very common plant throughout the United States, growing by waysides, and in dry pastures. It has a woody, fibrous root, and a furrowed, hairy stem, rising one or two feet in height, and dividing at the top into a number of short branches. The leaves have a feathery appearance, consisting of a number of minute divisions and subdivisions, and are arranged on either side of a long, flat footstalk. The flowers are of a dull white color, and disposed in dense, flattened clusters, at the tops of the stem and branches. They remain in bloom from June to September.

1214. In Sweden, this herb is sometimes put into beer, instead of hops. In this country, the juice is used to give a green color to cheese. It should be gathered when in full bloom, carefully dried, and packed in closely covered boxes or drawers.

1215. Properties and Uses. Yarrow has a strong, aromatic, and pungent taste, with some bitterness and astringency. It is a very good tonic and stimulant, and useful in a low or debilitated state of the system, accompanied with nervous weakness. From its warming nature, also, it is serviceable in flatulent colic. The infusion should be employed, and this, sweetened with sugar, may be taken freely as a drink. It has proved beneficial in diseases of the skin, and all impurities of the blood. I have recommended it frequently in fluor albus, and it has always been productive of good results. It should not only be employed internally, but injected also into the vagina, several times a day.

YELLOW DOCK.

Rumex Crispus—The Root.

1216. Yellow dock, called also curled dock, narrow dock, and sour dock, is found in meadows, by roadsides, and about houses and barns. It has a yellow, spindle shaped root, which sends up a smooth, round, furrowed stem, occasionally tinged with red, and from two to three feet high. The leaves are long, narrow, and pointed, with the margins waved and curled. The flowers appear in crowded spikes at the top of the stem, each one producing a small, brown, triangular seed.

1217. The roots are used to dye yellow. The leaves are somewhat laxative, and are boiled as an article of food, being eaten with salt and vinegar.

1218. Properties and Uses. The root is bitter, and moderately astringent. Internally administered, it acts as a purgative. It is not used by Dr. Thomson, excepting as an external application in itch, for which it is highly beneficial. He bruises the fresh roots in a mortar, and adds cream sufficient to make an ointment. This mixture is kept in a warm place for twelve hours, when it is fit for use. It should be applied on going to bed at night, and in two or three days will effect a cure. It is rendered still more efficient by the addition of a small quantity of turpentine, and rheumatic drops. To a tea-cupful of the ointment, add a table-spoonful of the drops, and half that quantity of turpentine. Dr. Thomson informs me that this preparation, with the internal use of composition, will speedily cure the most inveterate form of the disease. The powdered root is recommended as an excellent dentifrice, especially when the gums are spongy.

RECAPITULATION

1219. The object of this recapitulation is, to group the plants according to their properties; and in addition to the general divisions of the materia medica, as emetics, stimulants, and tonics, others of a secondary but important character will be introduced, including antispasmodics, diuretics, demulcents, antacids, expectorants, laxatives, antiseptics, and aromatics. These, it will readily be perceived, could not have been introduced into the body of the work, without rendering it necessary to describe many of the plants under several different heads.

EMETICS.

1220. These are substances which produce vomiting. The principal emetic is *lobelia inflata*. The secondary emetics are,

boneset, bitter thistle, blue vervain, chamomile, Canada snake root, horseradish, mayweed, mustard, skunk cabbage, and blood root. If the stomach is very much disordered, a tea of bayberry will operate as an emetic, but not otherwise. We are not to understand that all the secondary emetics can be employed with safety; on the contrary, some of them are harsh, and even dangerous.

STIMULANTS.

1221. Stimulants are medicines which excite an action in the living body. The best and purest stimulant is cayenne. Among the others may be enumerated black pepper, bayberry, fleabane, Canada snake root, catnip, cinnamon, cocash, featherfew, garden pepper, golden rod, ginger, hemlock leaves, myrrh, mustard, mayweed, pennyroyal, prickly ash bark and seed vessels, peppermint, sarsaparilla, summer savory, tansy, Virginian thyme, and yarrow. We should always be careful to distinguish the pure, healthy stimulants, from those which are acrid, poisonous, or narcotic. Mustard, although a stimulant, is of an acrid character, and should not be used.

ASTRINGENTS.

1222. Astringents pucker the mouth, and render the parts to which they are applied more dense and firm. They include bayberry, witch hazel leaves, raspberry leaves, sumach leaves and berries, white pond lily, black birch, evan root, marsh rosemary, bark of the hemlock tree, purple archangel, fleabane, cinnamon, cocash, hardhack, spicy wintergreen, beth root, yarrow, and yellow dock.

TONICS.

1223. Tonics promote appetite and digestion, and strengthen the body when it is weak or debilitated. The leading tonics are balmony, golden seal, bark of the American aspen, bark of the large aspen, unicorn, myrrh, and the kernels of peach and cherry stones. Among the other plants and vegetable substances which possess tonic properties, and some of them valuable, are green

archangel, boneset, bitter thistle, buds of the balsam poplar, barberry bark, chamomile, fleabane, bayberry, featherfew, ginseng, goldthread, hoarhound, hardhack, mayweed, pipsissewa, peppermint, spearmint, tansy, wormwood, wild cherry tree bark, leaves and root of the wild lettuce, raspberry leaves, yarrow, scullcap, elecampane, catnip, witch hazel leaves, and beth root.

NERVINES.

1224. These have the effect to compose or tranquillize the nerves, without impairing or deadening their sensibility, as is the case with narcotics. They include scullcap, lady's slipper, cayenne, lobelia, cocash, yarrow, wild lettuce, ginseng, and pipsissewa.

PURGATIVES.

1225. Purgatives are agents which quicken the peristaltic motion of the bowels, and increase the secretion of fluids from their mucous or inner coat. They include butternut, bitter root, black root, mandrake, barberry, chamomile, hoarhound, yellow dock, blood root, and sumach bark.

ANTISPASMODICS.

1226. These are medicines which have the power of alleviating spasm. Lobelia, and especially that form of it denominated *antispasmodic tincture*, is the most prompt and efficient agent in this class of remedies with which I am acquainted. Among the other antispasmodics, are scullcap, lady's slipper, and cayenne.

DIURETICS.

1227. Diuretics are substances which increase the secretion of urine. It is supposed that they enter the circulation through the medium of absorption, and are thereby brought into contact with the kidneys, which they stimulate to a more vigorous action. The diuretics consist of cool wort, cleavers, bark of the American and large aspens, juniper berries and leaves, fir balsam, hemlock leaves, fleabane, wild lettuce, leaves and berries of the sumach, burdock root, elecampane, and featherfew.

DEMULCENTS.

1228. Demulcents or mucilages are soft viscid substances, which have a soothing effect upon the parts with which they come in contact, protecting them from the irritation of acrid or offending matters. Hence they are useful in diarrhœa, and dysentery, and in the form of poultices for external application. They are also beneficial in coughs, irritation of the lungs, and irritation or inflammation of the urinary passages. In what manner they produce their good effects, however, is not precisely known. It is supposed by some that they enter the mass of the blood, and impart to it a mucilaginous quality, while others contend that the soothing impression which they make upon the stomach and bowels, is communicated to other parts of the system by means of the nerves. Whatever may be the theory of their operation, however, there is no question that they exercise a beneficial influence in the diseases specified. The principal demulcents are slippery elm, comfrey, buck horn brake, Irish moss, and hollyhock blossoms and root. The fixed oils (584) are also classed as demulcents.

ANTACIDS.

1229. These are alkaline substances which are employed to neutralize acids in the stomach. The principal antacid recommended in this work is the *bicarbonate of soda.* (1028.) Potash, pearlash, and sal æratus, are all alkalies, and of course antacids.

EXPECTORANTS.

1230. Expectorants are remedies which promote the discharge of matter from the lungs, whether it be mucus, pus, or any other morbid accumulation. Medicines which determine the blood to the surface of the body, as cayenne, or any of the pure, healthy stimulants, have an expectorant tendency; other expectorants, says Dr. Mitchell, act upon the mouth and fauces by virtue of the sympathy between those parts and the lungs. Of these, honey, liquorice, sirups, and mucilaginous substances may be enumerated. Emetics may be justly denominated expectorants, for by their action upon the lungs through the medium of the stomach and

diaphragm, they effectually unload the windpipe and bronchial tubes of their vitiated secretions. The vapor of water, or vinegar, or the dry fumes of cayenne, are all expectorants, because they excite an action in the membrane lining the air passages of the lungs, and not unfrequently convert a dry cough into a loose one.

1231. The principal expectorants are lobelia, cayenne, slippery elm, buck horn brake, Irish moss, hoarhound, fir balsam, blue vervain, boneset, elecampane, skunk cabbage, and Indian turnip. The last two I would not recommend, as they possess objectionable properties.

LAXATIVES.

1232. Laxatives are to be distinguished from purgatives, inasmuch as they have the effect to keep the bowels open without the risk of purging, even though they should be employed in full doses. (978.) Among the laxatives are cayenne, balmony, golden seal, and the bark of the American aspen. The unbolted wheat bread (1181, *et seq.*) is an excellent laxative. Boneset, also, I am disposed to regard more as a laxative than a purgative.

ANTISEPTICS.

1233. Antiseptics are employed both internally and externally, to arrest the process of putrefaction. Among the various remedies of this class, are wormwood, vinegar, cayenne, myrrh, the bitter or tonic medicines, marsh rosemary, and the yeast and carrot poultices. Cayenne is particularly valuable as an antiseptic, because it tends to keep up an action in the vessels of the gangrenous part, and thereby to prevent stagnation of the blood, without which putrefaction cannot ensue.

1234. "The presence of air," says Dr. Webster, in his Chemical Dictionary, "though not necessary to putrefaction, materially accelerates it, and those gases which contain no oxygen, are very efficient in checking or altogether preventing the process. Carbonic acid also remarkably retards putrefaction; and if boiled meat be carefully confined in vessels containing that gas, it remains a very long time unchanged, as seen in Mr. Appert's method of preserving meat.

1235. "There are several substances which, by forming new combinations with animal matter, retard or prevent putrefaction,

such as chlorine, and many of the saline compounds; sugar, alcohol, volatile oils, acetic acids, and many other vegetable substances, also stand on the list of antiputrefactives, though their mode of operating is by no means understood.

1236. "The alkaline earths and salts are antiseptics, and act by absorbing the acids formed in the process of putrefaction. Carbon or charcoal of wood is one of the most powerful antiseptics. It will restore tainted meat, and purify offensive water. Casks are now charred to contain water on long sea voyages, and it will continue pure and sweet in these for a great length of time."

AROMATICS.

1237. These are a numerous class of medicines, having a grateful odor, and an agreeable, aromatic taste. They are black birch, balm of Gilead buds, fir balsam, camphor, cloves, Canada snakeroot, cinnamon, cocash, featherfew, golden rod, ginger, ginseng, hemlock leaves, juniper berries, meadow fern burrs, pennyroyal, seed vessels of the prickly ash, purple archangel, peppermint, spearmint, summer savory, tansy, Virginian thyme, wormwood flowers, wild cherry tree bark, wild lettuce root, raspberry leaves, yarrow, and spicy wintergreen.

PART FOURTH

LIST OF COMPOUNDS.

DRY PREPARATIONS.

COMPOSITION.

1238. Take of bayberry six pounds, ginger three pounds, cayenne six ounces, cloves six ounces, all pulverized. Mix thoroughly, and sift.

1239. If there is a panacea in the world, it is this preparation. It is a safe and gentle stimulant, equalizing the circulation, strengthening the digestive organs, obviating costiveness, producing a moist condition of the skin, and, in a word, enabling the different organs of the body to perform their functions in a natural and healthy manner. It operates in harmony with the laws of the human system, and may, therefore, be safely employed in every form of disease. It is particularly useful, as a convenient family medicine, in sudden colds, febrile attacks, hoarseness, sore throat, coughs, influenza, earach, toothach, pains in the stomach, bowels, or other parts of the body, rheumatism, cold hands and feet, diarrhœa, dysentery, colic, croup, giddiness, hysteria, mumps, headach, derangement of the stomach, jaundice, worms, nervous disorders, and the various affections of the skin. It rarely fails to bring out the eruption in measles, and smallpox, and these diseases are often cured with composition alone. In wounds, bruises, or any severe

local injury, the free use of it, so as to keep the skin moist, will generally allay the pain, and prevent the development of inflammation.

1240. In violent attacks of disease, where it is necessary to produce an immediate effect upon the system, half a tea-spoonful of cayenne, or a tea-spoonful of rheumatic drops, may be added to each dose of the composition. It may also be combined with nervines, diuretics, or any other medicine, according to the nature of the complaint which requires to be treated.

1241. If the stomach is very much disordered, it will operate as an emetic, but after the organ is cleansed, it will have no such effect, nor even occasion nausea.

1242. A strong tea of composition is very convenient and serviceable as an injection to evacuate the bowels, particularly in the treatment of children.

1243. MODE OF ADMINISTRATION. For an adult, take a moderately heaped tea-spoonful of the powder, and an equal quantity of sugar; rub them together, and add a tea-cupful of boiling water; drink the tea when sufficiently cool. There is no occasion for swallowing the grounds, as is a common practice, for the strength of the medicine will be extracted by the boiling water, and the sediment can have no other effect than to clog or irritate the stomach. When the patient takes the tea, he should be in bed, with a heated stone, or bottle of hot water, wrapped in a damp cloth, at his feet, or seated by the fire, if the season requires it, covered with a blanket, to favor perspiration. If composition be taken during the day, while the individual is exposed to the open air, it should be mixed, together with the sugar, in a small quantity of cold, or lukewarm water, and swallowed in substance. This precaution is necessary, in order to prevent a perspiration, which might be suddenly checked, and thereby injure the patient. The medicine is also very pleasant in this form, and may be given easily, and with great advantage, to children, especially in chronic affections.

1244. In an obstinate cold, or any lingering complaint, a dose of warm composition tea should be taken every night, at bed time, as directed above, until a cure is effected. The tea is sometimes prepared with equal parts of boiling water and milk, and in this form, if well sweetened, is a very pleasant beverage.

SPICED BITTERS.

1245. Take of pulverized poplar bark six pounds, golden seal, cloves, ginger, and prickly ash bark, each a pound and a half,

balmony a pound, cayenne three quarters of a pound, and sugar seven pounds. Mix thoroughly, and sift. If the prickly ash is omitted, the quantity of cayenne may be somewhat increased. It is usual to add about one twentieth part of cayenne to the tonic or restorative preparations.

1246. Spiced bitters is one of the best medicines in use for restoring the tone of the digestive organs, and creating an appetite. It is an excellent remedy in jaundice, dyspepsia, worms, flatulency, piles, headach, giddiness, pains in the stomach and bowels, diarrhœa, gravelly complaints, strangury, gonorrhœa, fluor albus, heartburn, rickets, mercurial salivation, consumption, and the whole train of chronic diseases. It is a laxative, and keeps the bowels gently open, unless they are obstinately costive. Its use would be improper during the continuance of a violent febrile or inflammatory affection, but as soon as the disease is subdued, it may be freely and beneficially employed. In the form of a weak tea, well sweetened, it is a refreshing drink for weak patients, and is grateful also to those in health, during the hot weather of summer. If food occasions distress, a dose of it will generally afford relief.

1247. Mode of Administration. Take a moderately heaped tea-spoonful of the powder, and double the quantity of sugar; stir them together, add a tea-cupful of boiling water, and drink the tea when sufficiently cool. The proper time to take the bitters, is fifteen or twenty minutes before each meal. If the patient is obliged to be in the open air, a tea-spoonful of the powder, with sugar to suit the taste, should be mixed in half a wine-glass of cold, or milk warm water, and taken in substance. The bitters need not be used after the appetite is fully restored.

FEMALE RESTORATIVE.*

1248. Take of pulverized poplar bark ten pounds, balmony two pounds, golden seal two pounds, unicorn two pounds, beth root two pounds, myrrh one pound, cinnamon one pound, cloves one pound, cayenne half a pound, and loaf sugar ten pounds. Mix well, and sift.

1249. This medicine is an excellent tonic and stimulant, and is particularly designed for the complaints of females, such as fluor

* This, with some improvement in the compound, is Dr. Thomson's *woman's friend.*

albus, weakness of the uterine organs, and irregularity of the menstrual discharges. It is also beneficial in loss of appetite, dyspepsia, worms, diarrhœa, spitting of blood, coughs, asthma, difficulty of breathing, a low or exhausted state of the system, and the various diseases in which the spiced bitters is employed. It is beneficial both before and after child-birth, especially if there is debility of the organs concerned in the process of labor. Taken two or three times a day, in suppression of the menses, it rarely fails, excepting in obstinate cases, to relieve the difficulty.

1250. Mode of Administration. A moderately heaped tea-spoonful of the powder, with double the quantity of sugar, may be taken three times a day, in the same manner as has been directed for the spiced bitters. (1247.) As a general thing, however, unless the stomach is very irritable, it had better be taken in substance, mixed with a small portion of cold, or lukewarm water, as the patient will then derive the full benefit of the myrrh, which is only partially dissolved by the water.

INJECTION POWDER.

1251. Take of bayberry one pound, scullcap, or lady's slipper, half a pound, cayenne a quarter of a pound, all finely powdered. Mix, and sift.

1252. Directions. For an ordinary injection, intended only to evacuate the bowels, two large tea-spoonfuls of this powder may be steeped in a tea-cupful and a half of boiling water, and the liquid, when about milk warm, administered with an appropriate syringe. The injection may be repeated, if necessary. The quantity of liquid specified, is generally sufficient, but a pint or more may be employed, if deemed advisable. The sediment should always be omitted, for it is liable to choke the syringe, and in piles, dysentery, and other forms of disease, it adheres to the mucous membrane of the bowels, occasioning irritation, and tenesmus. There can be no advantage in employing the sediment, if the medicine has been steeped in boiling water, so as to extract its strength. In severe or violent attacks of disease, half a tea-spoonful or more of green lobelia may be steeped with the two tea-spoonfuls of the injection powder, and when the infusion is of the proper temperature for use, two, three, or four tea-spoonfuls of rheumatic drops may be added. See *injections* or *enemas* in the index.

COUGH POWDER.

1253. Take of beth root, scullcap, and the leaves of boneset, each three quarters of a pound, cayenne, and green lobelia, each half a pound, all pulverized. Mix thoroughly, and sift.

1254. Uses. Take three tea-spoonfuls of the powder, and add a pint of boiling water; steep for twenty minutes by the fire, strain, sweeten with honey, and stir in a tea-spoonful of powdered slippery elm, so as to render the liquid somewhat mucilaginous. Half a tea-cupful of this tea may be taken five or six times a day, the patient in the meantime occupying a warm chamber or apartment, if the season renders it necessary. I know of no better remedy for a cough, hoarseness, difficulty of breathing, or soreness of the lungs. It is of great value also in croup, and whooping cough. The quantity of lobelia is probably too small to occasion nausea, but if this should occur, the dose may be somewhat diminished. Nausea, or even vomiting, however, is objectionable only as being disagreeable to the patient.

LIQUID PREPARATIONS.

RHEUMATIC DROPS.

1255. Take of cherry spirit, thirty, or thirty-five per cent. above proof, five gallons; best Turkey myrrh, reduced to a powder, four pounds; bayberry one pound; balmony three quarters of a pound; scullcap half a pound; cayenne five ounces. Put these into some convenient vessel, and stir or shake them several times a day for a week or fortnight, when the liquid may be poured off, and bottled for use. If cherry spirit cannot be obtained, good fourth proof brandy may be substituted, taking care to procure that which is free from adulteration.

1256. This preparation is a stimulant and tonic, and is beneficial in loss of appetite, and a feeble or languid state of the digestive organs. When it is desirable to produce an immediate effect upon the system, one, two, or three tea-spoonfuls of it may be added to a dose of composition, or other tea, with great advantage. In this form, it is useful in colic, hysteria, delirium tremens, rheumatism, mortification, hemorrhage, convulsions, and all violent attacks of disease. A table-spoonful of it, more or less, in a tea-cupful of strong bayberry tea, is a valuable remedy in

diarrhœa, and may be repeated every two hours, until a cure is effected. Dropped on loaf sugar, and swallowed, it is serviceable in coughs, tightness of the breast, difficulty of breathing, and soreness or irritation of the throat. A tea-spoonful mixed with two-thirds of a wine-glassful of warm water, sweetened, is beneficial in nausea, giddiness, headach, pains of the stomach and bowels, and distress occasioned by over-eating. It also has the effect to sweeten an offensive breath. Diluted with water, it affords an excellent wash for the mouth, particularly if the gums are spongy or ulcerated; and if the teeth are incrusted with tartar, it should be used every morning, with a tooth-brush. Mixed with the dust or powder of sumach berries, it is an excellent wash for ring worms, and similar affections of the skin. A piece of raw cotton, or lint, moistened with the drops, and inserted into the ear, will frequently cure the earach; and if a tooth is hollow and painful, a similar application may be made with equal advantage. Deafness, also, where it is occasioned by hardened wax, is signally relieved by injecting the drops, diluted with water, into the ear, with a small syringe, repeating the operation every night and morning.

1257. Where the skin is hot and dry, and the tongue parched, the use of the drops is improper, excepting in combination with cayenne, composition, or some other stimulating tea, intended to produce a perspiration, for the alcohol which they contain, has a tendency to increase rather than diminish the febrile symptoms.

1258. The rheumatic drops are of unequalled value for bathing sprains, and bruises, and as an application to fresh wounds, cuts, offensive sores, and parts that are approaching a state of mortification.

1259. Dose. From a tea-spoonful to a table-spoonful in composition tea; warm water, sweetened; or in the pure state.

WINE BITTERS.

1260. Take of poplar bark six pounds, golden seal two pounds, balmony two pounds, scullcap one pound, unicorn one pound, and cayenne three quarters of a pound. The balmony and scullcap may be used in the crude state, but the other articles should be reduced to a coarse powder. Put these materials into some convenient vessel, add four gallons of water, and boil gently for half an hour, or until the liquid is reduced to about three gallons, keeping the vessel, in the meantime, closely covered; strain through a coarse cloth, add twenty pounds of sugar,

and boil again until the scum ceases to rise, which will be in about five minutes. This done, strain the liquid a second time through a cloth, or sieve, and when nearly cold, add the infusion of half a pound of pulverized prickly ash berries, and a pound of cinnamon, prepared by steeping them in a close vessel, together with twelve gallons of sweet Malaga wine. The preparation is then fit for use, and should be put into clean bottles, or kegs.

1261. USES. This preparation is an agreeable restorative cordial, and is useful in dyspepsia, loss of appetite, faintness, sinking at the stomach, heartburn, flatulency, drowsiness, headach, and all diseases dependant on a deranged condition of the digestive organs. It is beneficial also to persons recovering from sickness. Taken after a meal, it will relieve the distress occasioned by indigestible food, or the unpleasant sensations which accrue from an overloaded stomach. Added to cold water, it makes a refreshing and wholesome drink in summer. The dose is a wine-glassful, more or less, according to circumstances.

DYSENTERY OR CHOLERA SIRUP.*

1262. Take of poplar bark, black birch bark, lady's slipper, and bayberry, each one pound, wild cherry tree bark, golden seal, and balmony, each half a pound, all reduced to a coarse powder. Add five gallons of water, boil gently for half an hour in a covered vessel, and strain through a flannel, or coarse cloth. Add fifteen or twenty pounds of sugar to the liquid, and boil again until the scum ceases to rise, which will be in a few minutes. Take the vessel from the fire, and stir in a pound of bruised peach meats, and half a pound each of powdered cloves and cinnamon. When the sirup is cold, add one gallon of rheumatic drops. Strain a second time, and bottle.

1263. USES. This sirup is an excellent remedy in diarrhœa, and the forming stages of dysentery, and cholera. From a half to a whole wine-glassful may be taken at a dose, repeating it every hour and a half or two hours until a cure is effected; or if the case is severe, one-third or one-fourth the quantity of rheumatic drops should be added. The sirup is also useful in worms, the summer complaints of children, and pains or soreness of the stomach and bowels.

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* This preparation is infinitely superior to the one specified by Dr. Thomson, in his new patent.

COUGH SIRUP.

1264. Take of poplar bark, and beth root, each a pound; water nine quarts; boil gently in a covered vessel for fifteen or twenty minutes; strain through a coarse cloth; add seven pounds of loaf sugar, and simmer until the scum ceases to rise. When the sirup is nearly cold, add a pint of the tincture of lobelia, and a gallon of pure French brandy.

1265. USES. This is beneficial in coughs, difficulty of breathing, tightness of the breast, and pain or soreness of the lungs. A table-spoonful, more or less, may be taken three or four times a day.

ANTISPASMODIC TINCTURE.

1266. Take of pulverized lobelia seeds one pound, cayenne and scull cap, each a quarter of a pound, rheumatic drops, prepared with fourth proof brandy, or strong cherry spirit, one gallon. Infuse for a week, or more, in a closely stopped vessel, shaking it two or three times a day. The liquid only is to be used, and not the dregs, as is a common practice. The latter have no strength, and of course should not be introduced into the stomach.

1267. This is an invaluable preparation, and is used in violent or critical cases of disease, such as locked jaw, epilepsy, convulsions, croup, delirium tremens, fainting, hysterical attacks, apoplexy, poisoning, hydrophobia, and suspended animation. It traverses the system with wonderful rapidity, and rarely fails to restore the patient. Drowned persons have frequently been recovered by its use, even under the most unfavorable circumstances. Several gentlemen, who were incredulous with regard to its effects, immersed a dog in water until he was apparently dead, and then poured a quantity of the tincture down his throat, which revived the animal in a very short time. I witnessed the experiment myself, and can vouch for the truth of the statement.

1268. In locked jaw, where teeth are rigidly clenched, the antispasmodic tincture may be regarded as a sovereign remedy. The liquid requires to be poured into the mouth between the teeth, and as soon as it comes in contact with the parts about the throat, the spasm will yield, and the jaws open.

1269. Epileptic patients should carry a vial of this prepara-

tion about their persons, and swallow a portion of it whenever they are threatened with a convulsion. I knew a young man with epilepsy, who prevented many severe attacks in this way, though he rarely had any other than a momentary warning of their approach.

1270. If an individual is rendered insensible by a fall, blow, or injury of any description, the tincture may be employed with the greatest advantage, and is much more speedy and effectual in rousing the dormant energies of life, than any mode of treatment which has ever yet been devised by the medical faculty. Every physician should supply himself with a bottle of it, as a substitute for the lancet.

1271. The antispasmodic tincture is an active and powerful emetic, and in case of poisoning by arsenic, laudanum, or any other substance, will evacuate the stomach in a speedy and effectual manner. Many instances have occurred in which it has freed the stomach from a dangerous poison, when ipecacuanha, tartar emetic and sulphate of zinc have failed to produce any effect. It is also an excellent emetic in difficult parturition, and should be administered without the dregs, as those are liable to occasion protracted nausea and vomiting.

1272. As an external application, the tincture is employed in bathing sprains, bruises, rheumatic joints, and any part of the body which is the seat of pain. It is also beneficial in erysipelas, having the effect to arrest the progress of the inflammation, and may be used in any stage of the complaint.

1273. Dose. This varies from a tea-spoonful to a table-spoonful, or more, according to the nature of the disease. In convulsions, apoplexy, and similar affections, it may be administered largely, and also added to the injections, if these are employed, in the quantity of a table-spoonful to each. The ordinary dose, however, by way of the stomach, is a tea-spoonful, repeated frequently, until relief is obtained, and if the patient is in a condition to swallow readily, it may be administered in composition tea, or a tea of cayenne and bayberry.

TINCTURE OF LOBELIA.

1274. This is prepared in a great variety of ways, but the following directions will suffice for all practical purposes.

1275. *Tincture of the Leaves.* Take of the pulverized leaves half a pound; water and spirit, equal parts, a quart. Infuse for ten days in a closely stopped bottle, and strain.

1276. When the tincture is of good quality, it is of a dark or black color. Prepared merely for the purpose of an emetic, no more spirit need be used than is sufficient to preserve it, for lobelia yields its properties to water as readily as to alcohol. Intended as an addition to some other tinctures, however, it requires to be equal in strength to that with which it is to combine. For example, if we were to add the tincture of lobelia, prepared with equal parts of cherry spirit and water, to the tincture of fir balsam, prepared with pure cherry spirit, the balsam, or at least a portion of it, would be precipitated. Hence the necessity of having tinctures of equal strengths, where they are to combine one with another.

1277. *Tincture of the Seeds.* Take of the pulverized seeds four ounces; water and spirit, equal parts, a quart. Infuse for ten days, and strain.

1278. This is probably about equal in strength to the *tincture of the leaves*, prepared according to the preceding formula.

1279. *Tincture of the Green Herb.* Collect the herb in autumn, before the leaves begin to fade; pound it in a mortar until it is reduced to a pulpy mass; add Malaga wine sufficient to cover it; infuse for a week or ten days, and strain.

1280. This is pleasant to the taste, and upon being swallowed, can scarcely be distinguished from the pure wine. After a few moments however, the pungency of the lobelia is felt in the mouth and throat. This preparation is a very convenient one for children.

1281. Instead of the Malaga wine, vinegar may be employed, which makes an excellent tincture; or equal parts of water and spirit, as previously directed; or pure cherry spirit, rum, gin, or fourth proof brandy.

1282. Uses. The tincture of lobelia possesses all the properties of the herb, and is frequently employed as an emetic, but is not to be preferred, for general use, to an infusion of the leaves, or seeds. The dose for an adult, is a table-spoonful, which should be given in a tea of composition, or of cayenne and bayberry, and repeated every twenty or thirty minutes, until the stomach is sufficiently cleansed. The dose for a child two years old is a tea-spoonful, repeating as above, and two tea-spoonfuls for one of ten or twelve years old.

1283. The tincture of lobelia is a convenient as well as valuable remedy in asthma, and croup, and generally affords very speedy relief. A tea-spoonful of sugar moistened with it, and taken

in divided portions, is useful in coughs, tightness of the breast, and difficulty of breathing. I have found it beneficial as a wash in tetter, and similar eruptions of the skin, and also in poison from ivy, or dogwood. Where an infant is restless, and will not sleep, six or eight drops of it may be administered in a tea-spoonful of warm water, sweetened, with the most favorable results. The dose may be repeated, if necessary, and also increased in quantity.

TINCTURE OF CAYENNE.

1284. Take of cayenne a quarter of a pound, alcohol a pint. Infuse for ten days, and strain.

1285. USES. This is a valuable external application for swellings, rheumatic joints, and parts that have lost their sensibility. It is particularly beneficial in palsy, and a wasting of the limbs, where ordinary stimulating washes produce no effect. A flannel moistened with it, and applied to the side in pleurisy, will generally afford relief. It is superior to the rheumatic drops for bathing, because of the absence of myrrh, which closes the pores, and leaves the skin sticky or glutinous.

TINCTURE OF SCULLCAP.

1286. Take of scullcap, powdered, four ounces; alcohol a pint. Infuse for ten days in a close vessel, and strain.

1287. USES. This is employed in nervous tremors, St. Vitus's dance, convulsions, locked jaw, and hydrophobia, but is by no means so efficient as the *antispasmodic tincture*. The dose is from one to three tea-spoonfuls, mixed with a tea of cayenne, or of composition. It may also be added to injections, in the quantity of a table-spoonful to each, where a nervine is required. (923, *et seq.*)

TINCTURE OF MYRRH.

1288. Take of myrrh, powdered, an ounce and a quarter; alcohol a pint. Infuse for ten days or a fortnight, and strain.

1289. USES. This is applied to fresh wounds, and indolent or offensive ulcers. Diluted with water, it is used as a wash for sore

mouth, spongy gums, and ulcerated throat. A table-spoonful of it is a valuable addition to an injection intended for the relief of diarrhœa, or dysentery. For internal use, half a tea-spoonful may be taken at a dose. (906.)

TINCTURE OF FIR BALSAM.

1290. Take of fir balsam an ounce, alcohol a pint. Shake them well together.

1291. Uses. This is applied to fresh wounds, burns, and ulcers, and is taken internally as a remedy in coughs, soreness of the bowels, gravelly complaints, gleet, and fluor albus. The dose is a tea-spoonful, repeated two or three times a day. (1108, *et seq.*)

VEGETABLE JELLY.

1292. Take of Irish moss (1123) half an ounce; wash it in water as hot as the hand can bear until it becomes slimy, which will be in about a minute; rinse in water milk warm. This done, cut two lemon peels into shreds, and put them, together with the moss, and half a pound of maple sugar, into a vessel over the fire, containing two quarts of water. Stir constantly until a jelly of the proper consistence is formed, removing the scum in the meantime, and taking care that the liquid does not boil. Strain through a cloth or sieve, and while the jelly is warm, the infusion of cayenne or ginger may be added, if desirable, to give it pungency. Instead of the lemon peel, it may be flavored with cinnamon, cloves, or any of the spices. When nearly cold, add a pint of brandy, or a quart of good wine.

1293. Instead of the Irish moss, a jelly may be formed by infusing six or eight roots of the buck horn brake (1053) in two quarts of hot water, and adding the sirup of two pounds of loaf sugar, with cayenne or ginger, and the spices, as already directed.

1294. Uses. The vegetable jelly is employed in coughs, diarrhœa, dysentery, soreness of the stomach and bowels, and as a restorative in recovery from sickness. It is of a soothing nature, and may be taken freely. The dose is half a wine-glassful, repeated four or five times a day. The jelly of the buck horn brake is used in bathing sprains, and weak backs.

COUGH BALSAM.

1295. Take of fir balsam an ounce, honey two ounces, alcohol a pint. Let these stand in a closely corked bottle for three or four days, shaking them frequently, and when the honey is entirely dissolved, add a pint of the tincture of lobelia,

1296. Uses. This is a most excellent cough preparation, and may be given in the dose of half a tea-spoonful, three or four times a day. It is beneficial also in asthma, pain in the breast, difficulty of breathing, croup, gravel, gleet, gonorrhœa, fluor albus, sore throat, hooping cough, and nervous complaints. An additional portion of molasses, or sirup, may be added to improve the taste, but in that case, the preparation must be shaken before it is used, or the balsam will float upon the surface.

ESSENCES.

1297. These are prepared by adding the volatile or essential oils to alcohol, in the proportion of one ounce of the former to a pint of the latter. The essences most commonly in use, are those of *peppermint*, *spearmint*, and *pennyroyal*. Mixed with warm water, sweetened, they may be employed instead of the herbs themselves. They are useful in allaying nausea, and in quieting cramps or pains of the stomach and bowels. The usual dose is a tea-spoonful.

PILLS.

LOBELIA PILLS.

1298. Take of pulverized lobelia seeds, cayenne, and scullcap, equal parts; form into pills with the mucilage of slippery elm, buck horn brake, or gum tragacanth.

1299. Uses. I have found these pills beneficial in a great variety of complaints, as ague and fever, asthma, tightness of the breast, hoarseness, croup, consumption, dyspepsia, jaundice, palpitation of the heart, rheumatism, nervous tremors, hooping cough, and St. Vitus's dance. They may be employed with advantage in all febrile and inflammatory affections, administering them between the courses of medicine. They are equally beneficial in

chronic complaints, strengthening the digestive organs, and gradually invigorating the whole system. Taken at night on going to bed, with a dose of composition tea, they afford great relief in coughs, and enable the patient to expectorate freely. They also serve to regulate the bowels, and produce natural stools, without causing debility or griping pains.

1300. DOSE. One or two of these pills may be taken every two hours during the day, or from three to five at bed time, with composition tea.

CAYENNE PILLS.

1301. Take of cayenne any desirable quantity, and make it into pills with some convenient mucilage, as previously mentioned. (1298)

1302. USES. These pills are useful in any complaint in which cayenne is required, and may be conveniently taken by those who dislike the medicine in the form of tea. They are frequently employed in dropsical affections, administering four or five of them after each meal. They are thought to be particularly beneficial in these complaints, because they stimulate without increasing the quantity of fluid in the body. They also relieve distress occasioned by food.

SUMACH PILLS.

1303. Take of sumach gum (863) and fir balsam, equal parts; pulverized loaf sugar sufficient to form them into pills. These are beneficial in gonorrhœa, gleet, fluor albus, and strangury. They increase the secretion of urine, and lessen its burning or scalding sensation on being voided. One or two may be taken at a dose, and repeated three times a day.

LINIMENT.

VOLATILE LINIMENT.

1304. Take of Candia soap, cut or scraped into shreds, three ounces; camphor an ounce and a half; tincture of cayenne half a pint; alcohol half a gallon. Infuse in a closely stopped bottle for a week, shaking it two or three times a day.

1305. Uses. This liniment is superior to any other with which I am acquainted for bathing sprains, bruises, rheumatic joints, and parts that are the seat of pain. It is equally beneficial in numbness. When it is applied, the part should be rubbed briskly for ten or fifteen minutes with the hand. It is highly useful as an application to the side in pleurisy, and to the abdomen in tenderness or swelling of the bowels. If it is not sufficiently powerful, an additional quantity of the tincture of cayenne may be added.

STIMULATING LINIMENT.

1306. Take of gum elastic, cut into shreds, four ounces; linseed oil a pint. Simmer these over a slow fire, stiring constantly, until the gum is dissolved, which will be in five or six hours. Then add three quarters of a pound of fresh beef's tallow, and continue the simmering until it is melted. When about blood heat, add an ounce each of the oils of cedar and hemlock, and a wine-glassful of the best antispasmodic tincture, stirring them well together.

1307. Uses. This liniment is highly serviceable as an application to the surface of the body after a vapor bath, or a course of medicine, particularly in the winter season. The skin should be rubbed with it thoroughly from head to foot. Patients who are laboring under chronic diseases, and possess but little animal heat, are greatly benefited by this practice. The liniment forms a coating upon the skin, and shields it from the air, without interfering at all with its functions. In night sweats, rheumatism, ague and fever, asthma, croup, consumption, dyspepsia, and tic douloureux, it may always be employed with advantage. If not sufficiently stimulating, it may be combined with a portion of cayenne, reduced to a very fine powder.

OINTMENTS, SALVES, AND PLASTERS.

MEADOW FERN OINTMENT.

1308. Take of meadow fern leaves and balm of Gilead buds, well bruised or pounded, each three ounces; fresh lard a pound. Moisten the buds with water, and simmer them in the lard, over a slow fire, until they cease to be glutinous, which will be in three or four hours. Then add the meadow fern burrs, also

moistened with water, and continue the simmering until their strength is extracted, which may be determined by rubbing them between the fingers, and ascertaining that they do not emit a fragrant smell. Pass the ointment through a coarse cloth, or sieve, and pour it into some convenient vessel.

1309. Uses. I have had considerable experience with this ointment, and can recommend it as an excellent application in tetter, scald head, soreness of the lips, or nose, itch, poison from ivy, or dogwood, and various cutaneous eruptions. A lady of Boston applied to me with an eruption upon her hands and arms, of six months standing, which appeared in a succession of little vesicles, followed by dry, brown scales or scabs. When I first saw the patient, her hands were swelled and painful, and several of the vesicles had been succeeded by troublesome ulcers. I directed the hands to be washed once a day with Castile soap and water, and the ointment applied morning, noon and night, preceded by a wash, now and then, of the tincture of lobelia. By this treatment, together with a moderate use of composition and spiced bitters, a perfect cure was effected in less than three weeks. I mention this case as one out of many to show the value and efficacy of the above ointment.

NERVE OINTMENT.

1310. Take of purple archangel, bittersweet bark, wormwood, chamomile, and meadow fern burrs, equal parts; pack them closely in a suitable vessel, and cover them with porpoise, goose, or turtle oil—the latter is the best. Simmer over a slow fire for twelve hours, stirring occasionally, and keeping the vessel covered. Strain, and when milk warm, add half an ounce of the oil of spearmint to each pint of the ointment. Preserve in a well corked bottle.

1311. Instead of the oil of spearmint, Dr. Thomson adds one ounce of the spirit of turpentine, but I consider the former preferable.

1312. Uses. This is employed in bathing sprains, bruises, swellings, stiff joints, and contracted sinews or tendons, rubbing the affected part briskly with the hand, when the application is made, and wrapping it in flannel to shield it from the air. The ointment is also applied to corns, as will be mentioned hereafter, in speaking of that complaint. It may be rendered more stimulating, if desirable, by combining with it a portion of antispasmodic tincture, or tincture of cayenne.

PILE OINTMENT.

1313. Take of the excrescences which form upon the leaves of the sumach, (864) very finely powdered, an ounce; fresh lard six ounces. Blend them together thoroughly. This is beneficial in piles, and often affords surprising relief. It may be confined to the parts by means of a bandage, and a piece of lint, or folded rag.

1314. Instead of the excrescences, mentioned above, an equal quantity of the root of marsh rosemary, reduced to a fine powder, may be substituted, but it is not quite so efficient.

1315. *Gall ointment* is an excellent application in piles, and deserves a passing notice. Take of galls, in very fine powder, an ounce, lard seven ounces. Mix. This is the formula of the United States Dispensatory.

HEALING SALVE.

1316. Take of Venice turpentine, beeswax, and fresh lard, each a pound, fir balsam three quarters of a pound, tincture of myrrh four ounces. Melt the solid articles, simmer slowly for ten or fifteen minutes, and strain. This salve is applied to wounds and sores after they have been cleansed by poultices, or otherwise, and the inflammation subdued.

GREEN SALVE.

1317. Take of Venice turpentine, and bayberry wax, (818) each half a pound. Melt, and add sweet oil to render the salve of a proper consistence. This is recommended by Dr. Smith of New York, as an application to scrofulous ulcers.

COMMON SALVE.

1318. Take of Venice turpentine, beeswax, and mutton tallow, equal parts; add the yolk of an egg, and a small portion of honey. Melt. This salve is applied to fresh wounds. It excludes the air, and favors the healing process.

ADHESIVE AND STRENGTHENING PLASTER.

1319. Take of rosin a pound and a half, beeswax, hemlock gum, and fresh lard, each two ounces. Melt; add half a gill of brandy, and a quarter of an ounce each of sweet oil, sassafras oil, and camphor. When the different articles are thoroughly incorporated, pour them into a vessel of cold water, and work them with the hands, as a shoemaker works his wax. The proportion of rosin requires to be increased in the summer, and diminished in the winter.

1320. Uses. This compound, spread on soft leather, is applied to a weak back, or any other part of the body which is in a state of debility. The relief which follows its application, is no doubt owing, in a great measure, to the mechanical support which it affords to the muscles. It is also used as an adhesive plaster to confine the lips or edges of wounds together. For this purpose it is spread on cotton or linen cloth, which is cut into slips, warmed by the fire, and applied across the wound according to the circumstances of the case. This plaster is extremely useful also, for confining poultices to different parts of the body, which it might be inconvenient, or perhaps almost impossible to bandage.

CANCER PLASTER.*

1321. Take of red clover blossoms any desirable quantity, and water sufficient to cover them: boil gently until the strength of the blossoms is extracted, which will be in about an hour; strain through a coarse cloth, and use pressure sufficient to force out all the liquid; pour this into some convenient vessel, and place it in a kettle of water over the fire; boil until the liquid is of the consistence of tar.

1322. Uses. This is spread on a piece of linen, or soft leather, and applied to open or running cancers, and ill conditioned sores of every condition. The success which has attended its employment in these cases, has won the approval even of the medical faculty. The Boston Medical Journal says, "We are assured by Dr. Corbett, that on ulcerated surfaces, deep, ragged-edged and otherwise badly conditioned burns, there is nothing to

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*The Shakers of Canterbury, N. H. manufacture this article, and call it the *extract of red clover.*

be compared with this plaster. In connection with a peculiar soothing property which it imparts to an inflamed, irritable sore, it proves an efficacious detergent, and promotes a healthful granulation.

MISCELLANEOUS PREPARATIONS.

ANTI-DYSPEPTIC BREAD.

1323. Take of pulverized poplar bark, bayberry, golden seal, cloves, cinnamon, and lady's slipper, each two ounces; cayenne one ounce; loaf sugar four pounds and a half. Mix thoroughly, and sift. Knead these articles into a stiff dough with mucilage of slippery elm, adding an ounce each of the oils of pennyroyal and spearmint. During the process of kneading, the table should be sprinked occasionally with fine flour. If slippery elm cannot be obtained, a mucilage may be prepared with buck horn brake, Irish moss, or hollyhock blossoms, which will answer an equally good purpose. After the bread is sufficiently kneaded, it may be made into cakes or loaves of a convenient size, or rolled into pills.

1324. Uses. This preparation may be carried in the pocket, and eaten freely, whenever there is any occasion for its employment. It is beneficial in coughs, consumption, faintness at the stomach, dyspepsia, jaundice, loss of appetite, sore throat, mercurial salivation, and scrofulous affections. It warms and invigorates the system in cold weather, and dissipates the languid or drowsy feelings which are so often experienced on the return of spring. Travellers, and seamen, who are much exposed to a changeable climate, would find it a valuable preventive of disease. Dr. Thomson recommends it as a substitute for tobacco, with this difference, however, that the bread is to be swallowed, as it dissolves in the mouth.

HEADACH SNUFF.

1325. Take finely powdered bayberry, and scent it with the oil of spicy wintergreen, or golden rod. This is useful in headach, and colds. I know an inveterate snuff taker, who has substituted it for the preparations of tobacco. It has been employed beneficially in polypus of the nose, but is not so efficient as the powdered blood root.

SMELLING SALTS.

1326. Take of pearlash one ounce, sal ammoniac half an ounce. Pulverize each by itself, and mix. Preserve in a closely stopped bottle, or it will liquefy. This is useful in headach, faintness, and vertigo.

VEGETABLE CAUSTIC.

1327. Take of the common sheep sorrel, any desirable quantity; bruise or pound it in a mortar, and press out the juice; evaporate this in the sun, until it is of the consistence of tar. The caustic, thus prepared, is to be spread on a piece of linen, bladder, or soft leather, and applied to the cancer, removing it occasionally if it becomes too painful. When the skin is broken, and the cancerous tumor extracted, other applications may be made, such as the cancer plaster, or poultices, according to the peculiarities of the case. See *cancer* in the index.

1328. Another form of vegetable caustic is made as follows. Boil the ley of hickory, or oak ashes until it is of the consistence of tar. Mix this with a small portion of honey, and apply as already directed, taking care to confine the caustic within the circumference of the tumor.

PART FIFTH.

PRACTICE OF MEDICINE.

PRELIMINARY OBSERVATIONS.

FEVER.

1329. This is a disease which seems to be regarded by the medical faculty as a profound and impenetrable mystery. Professor Jackson of the Pennsylvania University, says, "This problem has continued unsolved to the present period, has been the most disquieting question of our science, and has heretofore defied the attempts, even of the most gifted, to give it permanent form, or settle it on an established basis." Again, he observes, "For the greater part, the professed treatises on fever, have been works of imagination, composed in the style of romances—fancy sketches—or are profound metaphysical abstractions, filled with subtleties, and hypothetical reasonings."*

1330. Dr. Good, than whom no man is more distinguished for his researches in medical science, observes, "No complaint is so common as fever, and none so difficult to be defined. In reality, no writer seems to have been fully satisfied with his own definition; and it is not extraordinary, therefore, that he should seldom have given satisfaction to others."†

1331. Dr. Southwood Smith, physician to the London Fever

* Principles of Medicine, by Samuel Jackson, M. D. p. 608.
† Study of Medicine, 6th American edition, vol. i. p. 325.

Hospital, pursuing the same train of reflections, says, "The slightest glance at the history of the doctrines which have been taught relative to the nature and seat of fever from remote antiquity, and more especially a consideration of the variety and even the contrariety of the received opinions respecting both, in the present day, but too clearly show that if the ancients were in error, there cannot be many points with regard to which the moderns are right, since there is scarcely one in which they are agreed."*

1332. Dr. Eberle falls into the views of Dr. Smith, and says, "From a retrospective glance over the history of our science, we are forced to acknowledge that there is, perhaps, no subject which is more eminently calculated to humble the pride of human reason than this one. In relation to it, pathology has been in a continued state of revolution and instability. The human mind has been engaged with it for near three thousand years. Theories have risen and sunk in a continued and rapid series of succession; each has had its hour 'to strut upon the stage,' and its votaries to yield it faith; but the stream of time has hitherto overturned all these insubstantial, though often highly wrought fabrics."†

1333. With these acknowledgments of the medical faculty, that they are totally ignorant of the nature of fever, how are they to prescribe for it with safety or success? If their treatises on the subject are mere "*works of the imagination*"—"*fancy sketches*"—"*metaphysical abstractions*," what are we to expect from their practice but devastation and death? Is it any wonder that fever is a scourge of the human race? Need it excite our surprise that the learned Dr. Bostock should have pronounced it "the opprobrium of the medical faculty?" Need we be astonished at the exclamation of the late Dr. Hosack, that "fever and febrile diseases still constitute the great outlets of human life, and continue to be almost as fatal as in the time of Sydenham, who calculated that eight out of nine of all the deaths occurring in the human family, were caused by febrile complaints?"

1334. It has been said of the celebrated John Hunter, that if he once formed an opinion, he would obstinately adhere to it under all circumstances; and Dr. Rush has facetiously characterized him as one "who would never give up any thing he asserted until he gave up the ghost."‡ This is unfortunately the case with the great body of medical men, especially with regard to their

* Smith's Treatise on Fever, p. 19. Philadelphia, 1830.

† Eberle's Practice, 4th edition, vol. i. p. 14.

‡ Thatcher's American Medical Biography.

doctrines concerning fever, for although they consider the disease as one beyond the powers of their comprehension, they continue to adhere to their dogmas respecting it, and denounce all who have the hardihood to differ from them in opinion.

1335. It is amusing to take a retrospective glance at the various theories which have existed in relation to fever. Hippocrates, who is styled the Father of Medicine, supposed there were four humors in the body, consisting of blood, phlegm, and yellow and black bile, and that if either of these were in excess, nature rallied her efforts to expel it, and gave rise to a commotion which terminated in some one of the forms of fever. This doctrine was advocated by Galen, five or six centuries after the time of Hippocrates, and though the former is still regarded by modern physicians as a brilliant light in the medical firmament, his fanciful speculations can have no other effect than that of exciting our laughter, or ridicule. He believed, says Dr. Southwood Smith, "that fevers were modified by the prevalence or putrefaction of one or other of the four humors of Hippocrates; that of the three kinds of ague and fever, one arose from the corruption of *phlegm*, a second from that of the *yellow bile*, and the third from that of the *black bile;* that in whatever part of the body the heat or fever commenced, it ultimately extended to the heart; that as soon as this happened, the general commotion of the vessels commenced, and in this manner nature was employed in exciting her powers, endeavoring to assimilate the good humors to the parts which were to be nourished, and to expel the bad, but that if at any time nature was unable to expel all the morbid humor, either from its thickness, abundance, or tenacity, or from some obstruction of the passages, it would necessarily undergo putrefaction, and produce the most fatal effects."*

1336. During the seventeenth century, the famous Sydenham came before the world with a new theory, and taught that diseases were owing to an impure state of the air, the particles of which became incorporated with the blood, and produced in it a "morbific contagion;" that nature provided herself with a method to expel this morbid matter, which would otherwise ruin the patient; that the gout was nothing but nature's contrivance to purify the blood of old men, and to purge the deep parts of the body; and that fever was also a contrivance of nature to separate, either by perspiration, looseness, or some kind of eruption, the vitiated particles of the blood which had been drawn in by the air.†

* Smith's Treatise on Fever. Philadelphia, 1830.

† Dr. Southwood Smith.

1337. Boerhaave, who succeeded Sydenham, supposed that fever was owing to a viscid or glutinous state of the blood, which was forced into improper vessels, and became stagnant "in the extremities of the capillaries," thereby causing the cold and hot stages of the disease.

1338. Clutterbuck and Broussais attributed fever to a local inflammation, but they differed as to its seat, the one referring it to the brain, and the other to the mucous membrane of the stomach and bowels. They both appealed to their dissections of dead bodies to prove the correctness of their views, but neither of them, at the present time, appear to have many advocates. Broussais, however, deserves credit for having adopted a less pernicious plan of treatment than that in common use, for instead of administering calomel, nitre, and other poisonous drugs, he relied chiefly on abstinence from food, and the use of acidulated gum water, as a drink. In other words, he amused the patient, while nature was performing a cure.

1339. Among the various authors of distinction who have written on the subject of fever, no one, in all probability, has approached nearer to the truth, in many respects, than Dr. Cullen, though some of his opinions, it must be admitted, have been discarded as having no foundation in truth. In his doctrine of fever, he remarks, the most noted of the remote causes, among which he includes contagion, miasmata, and cold, are of a sedative nature, and diminish the energy of the brain, thereby producing a debility of the whole system, and particularly of the minute or capillary vessels of the skin. "It is evident," he thinks, "that there are three states which always take place in fever, a state of debility, a state of cold, and a state of heat. The cold stage," he affirms, "appears to be universally a means of producing the hot, because cold, externally applied, will often give rise to similar effects." He also says, "the more powerful the debilitating causes, and the greater the debility produced, the longer and more frequent will be the paroxysms." This doctrine seems to have met with the approbation of Dr. Rush, who says explicitly, and almost in the language of Cullen, that "fevers of all kinds are preceded by *general debility*, natural, or accidental."

1340. There can be no doubt, that previous to the commencement of fever, whether it be ushered in by a chill, or not, the minute or capillary vessels of the skin are in a state of debility, and as soon as febrile action ensues, the blood rushes into these vessels in a preternatural quantity, giving rise to an increase of heat, which has been denominated fever. The diameters of the vessels are necessarily enlarged by the passage of the

blood into them, just as a delicate India rubber tube is enlarged by injecting it forcibly with water, and under these circumstances, there is a natural tendency of the blood to accumulate at the surface of the body. We see a familiar illustration of this principle in a red or bloodshot eye. When the organ is in a healthy condition, its blood-vessels are so exceedingly minute as to carry only white blood, the globules of which are smaller than the globules of red blood, but when the vessels are weakened by disease, or the irritation of some foreign body, there is an enlargement of their diameters, and the red blood is forced into them, giving to the eye a red or inflamed appearance.

1341. Again, if the hand be immersed for a quarter of an hour in very cold water, and then withdrawn, it will soon become red and hot; the explanation of this is, that the blood-vessels have been weakened by the sedative effects of the cold, and are capable of receiving a greater quantity of blood than belongs to them in a natural or healthy condition. The application of snow to the back of the hand will produce the same effects, and this experiment can be performed by any individual for his own satisfaction. When the snow is removed, the skin will be pale and contracted, and the vessels destitute of blood, but presently it will return, giving them quite a swollen appearance, and even the neighboring vessels will be more full of blood than usual. Every one knows, that after exposure for any length of time to a cold and searching wind, the face becomes red and hot, which is another illustration of the principle in question. The Russian, or Finlander, who takes his vapor bath, and rolls in the snow, or plunges into a stream of icy coldness, as is his constant habit, soon experiences a warm or hot glow of the skin, accompanied with a bright red color, which a physician might readily mistake for a fever, if he were unacquainted with the circumstances of the case. I heard Professor Ware remark, in a lecture, that he knew a gentleman who, after riding eight or ten miles in the wind, an exercise to which he was not accustomed, had all the symptoms of a fever, and for two days he (the professor) was certain there was a fever. Now in this instance, the exposure had no doubt slightly debilitated the capillary vessels at the surface of the body, which favored the accumulation of blood within them, and gave rise, thereby, to an increase of temperature; but as there was probably but little derangement of the system in other respects, the vessels soon recovered their tone, and the circulation became equalized. Let an individual roll in the snow for a few minutes, previously divesting himself of his clothes, and then wrap himself warmly in blankets, and his skin will soon become as hot as though he were attacked with a violent fever. If, however, his health was not

previously impaired, the energies of his system will soon restore a balance to the circulation, and the heat of the skin will then subside.

1342. Debility of the capillary vessels at the surface of the body, therefore, is indispensable to the development of fever, and this debility may be produced by various causes, as exposure to cold, impure air, wounds, checked perspiration, intemperance in eating and drinking, the use of mineral or vegetable poisons, or any thing which has a tendency to disorder the system. Dr. Beaumont observes, that undigested food in the stomach appears to produce all the phenomena of fever. An *injudicious* use of the cold bath will sometimes give rise to the disease, as I have had occasion to notice in several instances. Magendie has produced all the symptoms of a dangerous fever in an animal, by injecting a few drops of putrid water into its veins.

1343. Fever may be complicated at its commencement with inflammation of some internal organ, or it may exist without it; but as a general thing, the inflammation no doubt arises as a secondary symptom. We have examples of this in the sore throat of scarlet fever, and the inflammation of the small intestines in typhus fever, either of which may be prevented by timely, appropriate, and sufficiently active treatment. The doctrine of Broussais, that fever has its origin in an inflammation of the mucous membrane of the stomach and bowels, is denied by the medical faculty generally, and is not deserving of serious notice. Fever is most emphatically a disease of the whole system, and of course is followed by a great variety of symptoms, differing according to the circumstances or peculiarities of the case. Dr. Fordyce, in his remarks on fever, says, "It affects the head, the trunk of the body, and the extremities; it affects the circulation, the absorption, and the nervous system; it affects the skin, the muscular fibres, and the membranes; it affects the body, and likewise the mind. It is, therefore, a disease of the whole system, in every sense of the word. It does not, however, affect the various parts of the system uniformly and equally; but, on the contrary, sometimes one part is affected in proportion to the affection of another part."*

1344. With regard to the symptoms of fever, it is said of Boerhaave, that "he collected from a great number of authors, all the symptoms which had been observed to attend the disease in its different forms. He then struck from the list all those which do not appear in all, but only in certain modifications of fever—retaining such only as by the common consent of authors, and his

* Good's Study of Medicine, 6th American edition, vol. i. p. 334.

own observations, were found to be present in every instance of the disease. The result was, that only three symptoms were left standing—namely, a quick and frequent pulse, preternatural heat of the surface of the body, and a sense of cold or chilliness in the commencement."*

1345. "Inequilibrium of the circulation," says Dr. Eberle, "is one of the most important characteristics of fever," and this is an obvious and familiar truth, which no one will pretend to deny. The increased heat of the skin indicates that there is an excess of blood in its vessels, and consequently, there is a corresponding deficiency in some other part of the body. In the chill which precedes a fever, the skin is pale and contracted, because the blood has retreated to the internal organs, but when the febrile reaction ensues, it is returned to the surface, and the skin acquires its natural fulness and color. Whether fever is general or local, the capillary vessels of the part or organ in which it is manifested, are surcharged with blood, and this presupposes a loss of balance in the circulation. In brain fever, for example, which has terminated fatally, the membranes of the organ are found, on dissection, to be more or less congested, having a red or inflamed appearance. When we speak of an organ, therefore, as being in a feverish condition, we understand that it contains an excess of blood, and of course there must be a deficiency of blood in some other organ, constituting what Dr. Eberle terms an "inequilibrium of the circulation."

1346. How are we to account for the preternatural heat of the skin, in fever, unless we admit that its vessels are surcharged with blood; for this fluid is the only medium by which heat is diffused through the system. Magendie remarks, that "the temperature of the body depends on the passage of the blood through the tissues, and it is evident that it will *increase* in direct ratio of the *volume of the blood*."† This is verified in wounds, which soon become hot and feverish by the flow of blood into the small and debilitated vessels of the injured part; and some of the French surgeons, availing themselves of this knowledge, recommend that wounds be frequently wetted with cold water, which, to use the language of a French writer, "prevents the blood from rushing in the natural quantity toward the affected part, and in a word, prevents the phenomenon of inflammation."

1347. The temperature of the skin, in fever, notwithstanding it is hot to the touch, does not exceed that of the blood, whether

* Eberle's Practice, 4th edition, vol. i. p. 15.

† Lectures on the Blood, *vide* Select Medical Library for 1839.

the latter be above or below the natural standard. In health, the skin is several degrees colder than the blood, but when its vessels are distended with this fluid, as is the case in fever, its temperature is proportionably increased. Magendie, whom I have quoted so frequently, remarks, that "when the blood rushes to a part in abundance, a certain rise of temperature no doubt occasionally follows, but it only reaches a few degrees above the natural standard, and never exceeds that of the blood in the left cavity of the heart."*

1348. As to the precise temperature of the blood in the various fevers, nothing seems to be definitely known. Dr. Thomson tells us that it is always below the natural standard, but as this is a mere assertion on his part, unaccompanied with any proof, it is not entitled to notice. It is evident, however, that the animal temperature sinks below or rises above the natural standard, according to circumstances. In cholera, according to Professor Espy, the heat of the body has been reduced as low, in some cases, as 60 degrees; while in scarlet fever, it has been known to rise as high as 105, or even 110 degrees. In ague and fever also, in which it is usually supposed, from the severe chills which accompany the disease, that the animal temperature is more or less diminished, we have the authority of some able experimenters, that it is considerably augmented, even during the cold stage. "M. Gavarret," says Dr. Dunglison, "has made numerous observations on the temperature of the human body during different stages of intermittent fevers, as well as in health, and from these it appears, that even during the stage of rigor (chilliness) the heat of the body is elevated from two to three degrees above its usual temperature. In the hot stage he has found the temperature still more elevated, but never more than one degree above that attending the stage of rigor; while in the sweating stage, though the temperature was above that of health, it was much below that of the two preceding stages."†

1349. Whether any confidence is to be placed in the experiments of M. Gavarret, I do not know, but they will at least serve to convince us, that there is a great deal of uncertainty with regard to the temperature of the body in fevers.

1350. I need scarcely say that the diplomatised physicians are without any principles to govern them in the treatment of fever. Some of them are opposed to depletion, in all its forms, and contend that even the mildest purgative is capable of doing

* Lectures on the Blood, *vide* Select Medical Library for 1839.

† American Medical Library for September, 1840, p. 169.

injury, while others employ the lancet with a bold and fearless hand, and administer cathartics, and a great variety of poisonous drugs, without much regard to quantity. Dr. Bostock, in some remarks on the different kinds of treatment which have been instituted in fever, says, "in a space of *less than forty years*, we have gone through *three revolutions of opinion* with respect to our treatment of a disease of very frequent occurrence, and of the most decisive and urgent symptoms."*

1351. With this candid acknowledgment of an eminent medical writer before us, how is it possible to regard the established practice of physic in any other light than that of the most absolute quackery? Instead of being a *science*, it is a mere *system of guess-work*, made up of jarring and discordant theories, and altogether unworthy the sanction of an enlightened or philosophic mind. As well might the astrologer, who pretends to read the stars, claim to be infallible in his predictions, as for the routine physicians to assert that they can cure disease, when they acknowledge that their practice is destitute of any fixed principles, and is swayed by "every tide of professional opinion."

1352. Professor Jackson believes that "fever is a provision of nature for the safety of the animal economy;" that "it is sanative and salutary in design—the evidence of power and force which admits of remedial and curative operations."† If this distinguished writer imagines his premises to be correct, why does he, in common with his medical brethren, recommend a plan of treatment which tends to destroy the vital energies, and counteract the sanative operations of nature? Dr. Southwood Smith truly observes, "the physician can easily weaken, but he cannot easily strengthen; he can depress to any extent he pleases, but he cannot communicate power as he wishes."‡ This is obviously true, and though a fever may be subdued by blood-letting, together with the administration of pernicious drugs, the patient may never recover from the debility which the treatment has occasioned. Cases of this kind are occurring daily, and while the physician gazes upon the wreck he has made, no one appears to suspect that he has been the sole cause of the fatal catastrophe.

1353. With regard to what is deemed the appropriate treatment of fever, as it is pursued in the reformed or vegetable practice, adequate directions will be given when we come to speak of the different forms of the disease, and therefore it need not occupy our attention here. I will remark, however, that as fever

* History of Medicine, chapter xiii.
† Principles of Medicine, p. 606.
‡ Treatise on Fever, p. 39.

does not occur without the equilibrium of the circulation having been destroyed, it should be our object to restore that equilibrium as speedily as possible, and this is to be accomplished by the use of stimulants, the vapor bath, and if necessary, thorough *courses of medicine*, which will remove the disease without lessening the quantity of blood in the system, impairing the constitutional powers, or laying the foundation of some obstinate malady which is more dreadful than death itself.

INFLAMMATION.

1354. According to medical authors, the phenomenon of inflammation is as difficult to solve as that of fever. Professor Gross, a recent writer, says, "In the whole range of medical science, there is no topic which has attracted so much attention, and been the source of so much discussion, as this. Theory after theory has been formed, each in its turn to live for a while, and then to give way to some other, either more ingenious, or fostered and protected with more talent and pertinacity by its author."*

1355. Inflammation, according to this writer, plays a conspicuous part in a great variety of diseases. He says, "it may be assumed as a general proposition, liable to few exceptions, that all organic diseases, whatever be their seat or extent, are the result of inflammatory action, either of an acute or chronic kind."*

1356. Clutterbuck, in his remarks on inflammation, says, "It is a subject about which widely different, and even opposite opinions still prevail among practitioners. It is often asked, What is inflammation? In what does it essentially consist? These are questions to which, I fear, no very satisfactory answer can be given."†

1357. In inflammation, as in fever, there appears to be a weakness or debility of the blood-vessels, which allows the blood to flow into them in an unnatural quantity, giving rise thereby to an enlargement of their diameters, and the various phenomena of the disease. In inflammation of the eye, we have no difficulty in perceiving that there is an enlargement of the vessels, for we can then distinctly trace them in the delicate coats of that organ. Dr. Martyn Paine asserts, that the vessels of an inflamed part contain a preternatural quantity of blood, because a profuse hemorrhage often follows the

* Pathological Anatomy.

† Lectures on Blood-letting, *vide* Select Medical Library for May, 1839.

application of leeches to an inflamed surface. He also observes, that many physicians have objected to scarification in erysipelas, on account of the great flow of blood which is liable to take place."*

1358. Signs of Inflammation. These are *redness*, *swelling*, *pain*, and *augmented heat*, each of which is owing to an increase of blood in the capillary vessels. With regard to the swelling, there is also an effusion of the lymph or fibrine (117) of the blood into the surrounding parts, which "glues the whole structure together, and consolidates them into one mass." The compression of the nerves by the distended vessels, is said to be the cause of the *pain*. The throbbing which is sometimes experienced, is attributed to the pulsation of the arteries.

1359. The heat of an inflamed part never exceeds that of the blood. In the inflammation of an internal organ, therefore, it is probable that there is no increase of heat, but when the inflammation is seated externally, there is an elevation of temperature, because the skin, in health, as already stated, is several degrees colder than the blood.

1360. Parts that are insensible in health, as ligaments, cartilages, and bones, are extremely sensitive when inflamed.

1361. Suppuration. When an inflammation does not subside without the production of matter, it is said to terminate in suppuration. The matter thus formed, is technically termed *pus*, and is described as a cream-like fluid, heavier than water, and generally of a pale straw color. It is found in boils, and other swellings or tumors, and on the surface of sores. When it collects in the substance of an organ, it constitutes an *abscess*, and this abscess or cavity, is surrounded by a hard or indurated wall, which prevents the pus from escaping into the adjacent texture. This is verified in boils, the hardened circumferences of which may be traced with the fingers. Sometimes, however, no such boundary is established, and the pus makes its way into the neighboring parts. This is particularly the case in weakly constitutions, or persons of a scrofulous habit.

1362. Pus varies in appearance according to circumstances, and is sometimes extremely poisonous, irritating and inflaming the parts with which it comes in contact. Of this character is the discharge in gonorrhœa, the contents of a smallpox pustule, and the matter employed by the diplomatised physicians in *vaccination*.

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* Theory of Inflammation, *vide* American Journal Medical Sciences for May, 1838.

1363. When suppuration commences, or, in other words, when matter begins to form, the patient is attacked with chills, succeeded by flushes of heat, and other disturbance of the general system. Meanwhile the tumor or swelling, if it is situated externally, becomes soft and pointed, and finally bursts. The chills, however, may be usually prevented by the use of cayenne, or composition, so as to keep the skin moist, or if the case is severe, by the administration of one or two *courses of medicine.*

1364. Suppuration may be promoted by the application of emollient poultices, as these produce a soft and relaxed condition of the skin. The local application of vapor, also, where it is convenient, is exceedingly useful for the same purpose.

1365. Ulceration. This is understood to be an absorption of any part of the body, resulting from previous inflammation, and may be defined therefore, as an increased action of the *absorbent vessels.* For instance, the parts over a deep seated tumor or swelling, are absorbed, to allow the matter to approach the surface of the body, or in common language, it may be said that the tumor has ulcerated through the skin. It is a wise provision of nature, that matter always tends to the surface of the body, or it might be discharged into some internal cavity, as the abdomen, or chest, and do irreparable injury. Dr. Cooper observes, "Even where there is but a delicate membrane between the matter and some internal cavity of the body, the abscess generally bursts externally, though it may have to make its way through a considerable thickness of substance."

1366. "An ulcerating sore," says Dr. Hunter, "is made up of little cavities or hollows; and the edge of the skin, which is scolloped or notched, is thin, turned a little out, and overhangs the sore, more or less. Further, the sore is always foul, being composed of parts not absolutely absorbed, and discharges a thin matter. When the ulceration stops, the edge of the skin becomes regular, smooth, a little rounded or turned in, and of a purple color, covered with a semi-transparent white."

1367. "Parts at a considerable distance from the source of circulation," says a writer on Surgery, "are generally more disposed to ulcerate, than others situated near the heart. This accounts, in a measure, for the greater number of ulcers on the lower extremities, than on the arms. Newly formed parts of the body, as cicatrices, callus, and all adventitious new matter, like tumors, are more liable to be absorbed than those which have long existed. In Lord Anson's voyage, when the crew of the ship began to suffer from great privations, fatigue, and scurvy, it was remarked, that those men who formerly had ulcers and broken

bones, became again disabled by the old sores breaking out afresh, and the callus of the old fractures being removed by absorption. When the men arrived on shore, where they could obtain fresh vegetables, they recovered their health, their bones united, and their sores healed."

1368. Bones, as well as other parts of the body, are subject to ulceration, but the ulceration is termed *caries*, and if they become completely dead or decayed, it is called *necrosis*.

1369. MORTIFICATION. This is one of the modes in which inflammation terminates, where it has been neglected, or improperly treated. Its symptoms will be detailed under the appropriate head.

1370. CAUSES. Among the various causes which operate to produce inflammation, blood-letting stands conspicuous; and it is melancholy to reflect, that the very means which are employed by medical men to subdue inflammation, very frequently render it much more violent.

1371. Dr. Mackintosh says, "Inflammation of the substance of the brain may take place, when the body is much weakened by *long continuance of hemorrhage.*"*

1372. Dr. Eberle says, he has met with cases in which *internal inflammation* occurred, apparently, in consequence of *excessive losses of blood.*†

1373. Magendie practised blood-letting on dogs, to see if it would arrest inflammation, but the disease raged with still *greater intensity than before.*‡

1374. M. Louis says, "We daily see persons who have been *copiously bled*, DIE OF INFLAMMATION."§

1375. If these statements are true, and they have the sanction of high and distinguished names, it is unnecessary to add any thing further in condemnation of the lancet, as an agent in the treatment of inflammation, for it not only fails to arrest the progress of the disease, but absolutely serves to develope it in a healthy state of the system. (350, *et seq.*)

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* Practice of Physic, 2d American edition, vol. ii. p. 109.

† Eberle's Practice, 4th edition, vol. ii. p. 427.

‡ Lectures on the Blood, *vide* Select Medical Library for 1839.

§ Researches on the Effects of Blood-letting, &c., translated by Dr. Putnam. Boston, 1836.

DISEASE—WHAT IS IT?

1376. Dr. Gross, in his Pathological Anatomy, says, "Disease may be defined to be a departure from the sound state, whether this departure consists simply in a derangement of function or structure."

1377. "Disease," says Dr. Marshall Hall, "is characterized by some derangement in the vital actions."

1378. According to Professor Ware, "disease is a deviation of the body from its healthy state—a perversion of the natural functions of the organs."

1379. These definitions accord with each other, and appear to be correct and philosophical. However slight may be the deviation from the healthy standard, we must nevertheless regard it as disease, or we shall be unable to fix the boundaries between a sound and morbid condition of the body.

1380. A disease is either general or local, functional or organic. It is general, where the whole system is affected, and local, where it is confined to a particular part. A disease is functional, when an organ is laboring under some simple derangement, and organic, when there is an alteration in the structure of the organ. We have an organic disease in tubercles of the lungs.

PULSE.

1381. Every time the heart contracts, it forces the blood through the arteries, causing them to swell or increase in size, and when they are superficial, as in the wrist, temple, and top of the foot, the current of blood may be felt passing through them, constituting what is termed the beating of the pulse.

1382. There is a great difference in the strength and velocity of the pulse, in different persons. In some it is extremely slow. Napoleon's pulse, it is said, did not average more than forty-four beats in a minute. In females it ranges much higher than in males. It is faster after a meal than before, from the excitement of the digestive process, and is greatly increased by exercise. It is also influenced by climate. Among the Greenlanders, it is often as slow as forty or forty-five in a minute.

1383. The pulse is quicker in children than in adults; but in old age it grows feeble in proportion to the diminished energy of the heart. The average number of pulsations in healthy persons, at different ages, laying aside individual peculiarities, is estimated as follows:—

At birth, it is	135	in a minute.
At one year, ...	125	do.
At two years, ...	105	do.
At seven years, ...	88	do.
At fourteen years, ...	80	do.
At adult age, ...	70	do.
At old age, ...	60	do.

1384. Disease, the narcotic poisons, or any thing which irritates, enfeebles, or disorders the system, exercises a material influence on the state of the pulse, and either increases or diminishes its velocity. Digitalis, by weakening the action of the heart, reduces the pulse in a very short time from *one hundred* to *thirty* beats in a minute.

1385. There are several descriptions of pulse, which are thus briefly summed up by Dr. Mackenzie: "A full, smooth, and strong pulse," says he, "is when the artery swells boldly under the finger, and resists its pressure more or less; if, in addition to this, the pulsation be very rapid, it is called quick, full, and strong; if slow, the contrary. A hard, corded pulse, is that in which the artery feels like the string of a violin, or a piece of tightened catgut, giving considerable resistance to the pressure of the finger. In extreme debility, in some particular diseases, and on the approach of death, the artery vibrates under the finger like a thread."

1386. If the pulse is unusually slow, it indicates an affection of the brain, though there are exceptions to this rule. A rapid and intermittent pulse, according to M. Louis, is an evidence of softening of the heart. A pulse of one hundred and twenty, is thought to indicate considerable danger, particularly in males, and if it exceeds one hundred and forty, a physician rarely anticipates the recovery of the patient. I have occasionally found the pulse at one hundred and forty, however, particularly in low cases of typhus fever, but by the use of injections, stimulating teas, and lobelia in small doses, have generally succeeded in reducing it, in the lapse of an hour or two, to very nearly the natural standard.

1387. The pulse is extremely variable, and physicians who depend upon it as a guide in their practice, not unfrequently destroy their patients.

1388. Dr. Eberle says, "I have often found a difference of more than twenty pulsations in a minute, between an examina-

tion made immediately upon entering the room of the patient, and a second one, some ten or fifteen minutes afterward."*

1389. "As to the pulse of a very young infant," observes a London physician, "very little judgment can be formed from it, for merely pinching the finger will, in a few seconds, occasion it to be too quick for the pulsations to be numbered."†

1390. Professor Ware, in one of his lectures, spoke of a young lady who was attacked with fever, and had the pulse at ninety six throughout the disease, but during her convalescence, and after she had left her bed, it rose to one hundred and forty-four, and continued at that rate for several days.

1391. Dr. Mackintosh, in his remarks on lung fever, says, "The pulse is variable in many respects, and practitioners should be wary in depending upon it, in the confident manner so generally followed, and more particularly in this disease, which I have known to go on rapidly to a fatal termination, the pulse never exceeding the natural standard. * * *. Morgagni noticed the uncertainty of the pulse in lung fever, long ago. Many suppose that recovery is rare, when the pulse beats more than one hundred and thirty. Andral makes this remark, and I have no doubt, from the milk-and-water practice which is too frequently adopted by French practitioners in inflammation of important organs, that they may find it so."‡

1392. Blood-letting does not appear to have a decided influence in reducing the frequency of the pulse in fever and inflammation, though it is so frequently employed by medical men for that purpose. M. Louis says, "In three patients with lung fever, bled on the second day of the disease, the pulse fell on the following day from 120 and 100 beats per minute, to 108, 80, and 96; but the next day, after a second bleeding, the beats were 104, 108, and 90 per minute; that is to say, *it had diminished in frequency very little after two bleedings.*" The author speaks of other patients who were bled for the first time on the fourth day, and in some of them *there was no improvement in the pulse at all on the following day.*§

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* Eberle's Practice, 4th edition, vol. i. p. 81.

† London Practice of Midwifery, 4th London edition, p. 275.

‡ Practice of Physic, 2d American edition, vol. i. p. 502.

§ Researches on the Effects of Blood-letting, &c., translated by Dr. Putnam. Boston, 1836.

FALSE MEMBRANE.

1393. This is a substance which covers the mucous membrane of the stomach and bowels, both in acute and chronic diseases, and is detached by the administration of courses of medicine, or any equivalent mode of treatment, which tends to exalt the vital powers, and thoroughly renovate the system. It is of a grayish, or whitish color, and possesses considerable firmness. There is every reason to suppose that, in many cases, it lines the whole extent of the intestinal canal, together with the stomach; for I have known it to pass off by stool for weeks in succession, amounting, in the aggregate, to several quarts. It is usually discharged in shreds, or patches, but sometimes passes in a tubular form, exactly resembling an intestine. It is thick, firm, and tough, but evidently unorganized, appearing to be wholly destitute of blood-vessels and nerves. It is similar to the membrane coughed up by children in croup, and is no doubt an effusion of lymph, which is soft at first, but gradually hardens, and assumes the form of a membrane. Dr. Marshall Hall supposes it to consist of mucus, but this is undoubtedly an error.

1394. The ancients, according to Bichat, supposed this membrane to consist of the inner coat of the intestines. This writer says, "A character peculiar to dysentery is, dejection by the anus of membranes of right sizes and of different degrees of thickness, which sometimes present the shape of the intestines: this is the reason why the ancients thought that we passed portions of intestines. It is incontestible that they are not portions of the intestines, but false membranes formed by the same process as those that we find in the stomach after poisoning with nitric acid."*

1395. Professor Thomson of Edinburgh, seems to have imbibed the notion of the ancients, that false membrane is actually a part of the intestines. He has published an elaborate paper on the subject,† which contains an abstract of thirty-five cases, in which false membrane was discharged, and he uniformly speaks of it as a portion of the intestinal canal, observing that in twenty-two of the cases, the discharged portion consisted exclusively of small intestine. "In respect to length," he says, "there appears to have been every variety from six to forty inches, and there does not seem to have been any relation between the length of the discharged portion, and the part of the canal from which it came. In a few of the cases, it is said that subsequently to the

* Bichat's Pathology, from the French, by Dr. Togno, p. 87.

† *Vide* Edinburgh Medical and Surgical Journal for 1835.

discharge of the principal portion, shreds of intestine, or something resembling them, were discharged." In 1836, however, we find Professor Thomson publishing another paper on the subject, in the same Journal, in which he rather discards the idea, that the membrane in question is a portion of intestine. He says, "During the progress of dysentery, it not unfrequently happens that a layer of coagulable lymph is deposited on the inner surface of the intestinal canal, and subsequently discharged by stool, resembling those layers which occasionally form on the inner surface of the windpipe and air passages of the lungs. If such layers assume a tubular form," he adds, "the incautious may very readily mistake them for portions of the intestinal canal."

1396. A moment's reflection must convince us, that the substance denominated *false membrane* is not the inner or mucous coat of the bowels, or it is apparent that its detachment, in pieces several feet in length, according to the testimony of Professor Thomson, would be followed by hemorrhage, and death. But such is not the case, for Professor Thomson speaks of a number of patients who speedily regained their health, after the discharge of this morbid substance took place. The inner coat of the intestines is a delicately organized membrane, containing blood-vessels, nerves, and absorbents, and if these were torn or lacerated by the detachment of the membrane, the fountains of life would be at once unsealed, and nothing could stay the progress of death. Mr. Bell, who is distinguished for his work on Anatomy and Physiology, very beautifully observes, that the external and middle coats of the intestines, are merely subservient to the inner or mucous coat; and those who have accurately studied the physiological relations of this tissue, will not only perceive the truth of Mr. Bell's remark, but acknowledge that the detachment, even of a small portion of it, would be attended by serious consequences.

1397. False membrane, as I have said, is coughed up by children in croup, and in some cases of post mortem examination, it has been found to line even the minute air passages of the lungs. It is easily separated from the mucous membrane, however, which shows that it is a distinct formation. The same thing occurs in the stomach, in mild cases of poisoning by nitric acid. An exudation of lymph takes place on the inner coat of the organ, intended to protect it from the corrosive effects of the poison, and this is formed into a membrane which is discharged by vomiting. Dr. Christison observes that the quantity is too great to suppose that it consists of the mucous membrane of the stomach.

1398. I have stated that false membrane is unorganized—that

is, that it is devoid of blood-vessels and nerves. Some eminent anatomists, however, entertain a different opinion. Dr. Gross quotes two Russian physicians as affirming, that in cholera subjects, they have several times seen the finest capillary vessels shooting into it from the natural membrane, but their testimony is regarded as somewhat equivocal.* Professor Thomson, in his last publication on the subject, favored the opinion that it is unorganized; and Dr. Good, in his Study of Medicine, says, "it has no vascular structure, will not bear extension, and loses its form as soon as handled." There does not appear to be the slightest evidence that it is an organized substance, or it would be identical with the mucous membrane itself, containing blood-vessels and nerves; and its detachment, under these circumstances, would be followed, as I have said, by hemorrhage, and death, neither of which I have ever known to occur.

1399. A thorough knowledge of this morbid substance is of great practical importance in the treatment of disease, for it plays a conspicuous part in many of the disorders to which the human system is liable. When it coats the internal surface of the stomach and bowels, it interferes with the digestive process, and prevents, to a certain extent, the absorption of chyle from the intestinal canal, without which the body cannot be adequately nourished. This will account for the lean and cadaverous appearance of many people afflicted with chronic disorders. The presence of a false membrane in the stomach and bowels, interferes with the functions of these organs, and though the patient may have a good appetite, as occasionally happens, the food is not digested, and of course is not appropriated to the wants of the animal economy. By a judicious routine of treatment, however, this excrescence may be detached, and then the mucous membrane will resume its functions, and the individual recover his health.

1400. We have seen that in poisoning by nitric acid, a false membrane is formed on the inner coat of the stomach; and the same thing ensues as an effect of the poisonous drugs employed by the diplomatised physicians. Administered in small and frequently repeated doses, the stomach becomes inured to their presence, and at length a large quantity may be given with impunity. How is this to be explained, excepting on the supposition that a false membrane is developed, by which the internal coat of the stomach is protected from the ravages of the poison? Tartar emetic, for example, will produce violent vomiting in the

* Gross's Pathological Anatomy, vol. ii. p. 214.

dose of two grains, but by repeating it several times in the course of a day, no vomiting will ensue, and it is said that twenty, thirty, and even fifty grains of the drug may then be administered without producing any sensible effect. The Italian physicians prescribe tartar emetic, in doses varying from a grain to two grains and a half every two hours, but we are told that it rarely produces vomiting. Now why is it that the poison, administered in these large quantities, does not almost immediately destroy life, excepting that the stomach is shielded from its effects by the interposition of a false membrane? Kings have sometimes resorted to the expedient of taking poison in small doses, that it might not prove fatal, if administered secretly with a view to their destruction. The story of Mithridates, king of Pontus, says a medical writer, is probably familiar to all. "Living in an age when poisoning was a frequent mode of removing obnoxious individuals, and knowing, as he was heir to the throne, that he should be exposed to assassination from this source, he commenced in early life to take poisons in small quantities, gradually increasing the amount, until he was finally able to take immense quantities without danger. He thus succeeded in rendering himself poison-proof; so that when he experienced reverses of fortune, and attempted to employ the common means of suicide, namely, poison, he found that the largest quantities of the most active substances of that class produced no effect, and was finally obliged to fall upon his own sword to end his life."

1401. I know not what explanation can be given of this curious circumstance, excepting that the stomach was lined with an adventitious membrane, which prevented the poison from taking effect.

1402. In all chronic diseases there is a discharge of false membrane by stool before a perfect cure is effected; and this occurs also in some of the acute diseases, in which there has been sufficient time for its formation. The period at which it is detached, after the treatment has been commenced, varies according to circumstances; it may be a few days or a number of weeks; and the membrane may be wholly discharged in two or three copious stools, or it may continue to make its appearance for a fortnight, or a month. In some instances, it is ejected from the stomach in shreds, or patches, during the operation of an emetic. Its detachment, so far as I have observed, is never accompanied with hemorrhage, or any other unfavorable symptoms, unless the patient abuses his digestive organs by improper eating, or drinking, and as soon as it makes its appearance in the alvine discharges, his restoration to health commences. In the cases re-

ported by Professor Thomson, in which the membrane was detached by the efforts of nature alone, he says that in many of them, a very short space of time elapsed between the discharge of the *portion of the bowel*, as he terms it, and the return of the individual to exercise. The appetite, too, he adds, "seems in many instances to have been very keen during the progress of recovery, and in some of those which ultimately proved fatal, death seems to have been occasioned by its too free indulgence, and particularly by the employment of unsuitable diet."

1403. Writers on pathology assert, that false membrane is not often detected in the stomach and bowels, in post mortem examinations; and hence the inference that it very rarely exists, excepting in the imagination of the theorist. Its actual discharge from the bowels, however, is probably the best proof we can have of its existence, and if we find this discharge taking place in every case of chronic disease which has been successfully treated by the reformed practice, we must conclude that its existence is by no means a phenomenon.

1404. With regard to post mortem examinations, I believe that the exudation of which the false membrane is composed, frequently imparts a roughness or thickening to the mucous membranes, without the cause being suspected. I heard Dr. Jackson of the Pennsylvania University assert, in one of his lectures, that there were some cases of chronic disease which could not be cured, because the mucous coats of the stomach and bowels were disorganized. Instead of any disorganization, however, I suspect that they had been rendered thick and rough by an exudation of lymph, constituting a false membrane in its partially developed state. It is further probable, that this adventitious formation may be fully developed, and yet suddenly disappear in the tissues of the membrane which it covers, thereby eluding our observation in a post mortem examination. This, at all events, would be no more miraculous, than that a thick coat should disappear from the tongue, without separating or peeling off, burying itself in the very substance of the organ, and leaving no trace of its existence.

1405. It is somewhat remarkable that medical men, enlightened as they claim to be, should be so entirely ignorant of false membrane as one of the grand consecutive links of disease, and of the necessity of its detachment and removal from the stomach and bowels, before a permanent restoration to health can ensue. Where they know any thing of its existence, they invariably regard it as a phenomenon. I once showed a specimen of it to a distinguished medical professor in Philadelphia, and he acknow-

ledged that he could tell me nothing about it, excepting that it was a morbid production. A portion of it was taken to Professor Warren of Boston, for his inspection, and after a critical and elaborate examination, he pronounced it to be the remnants of a *tape worm*. The individual who discharged the membrane, had been one of his patients, but finding no relief, was disposed to try the efficacy of a few *courses of medicine*. So little did Professor Thomson know of the nature of false membrane, that, in his abstract of cases, from which I have quoted, he says, "I am not aware that any attempt has been made in this country, (England) to bring these cases together, or to state the general conclusions to which they lead, respecting this *singular* example of the *vis conservatrix naturæ*, and I trust an attempt of the kind may prove serviceable to the profession." Professor Thomson's paper was published in 1835, as I have stated, which shows how little was known on the subject by the *medical profession* even six years ago, and previous to that time, it appears that the celebrated Andral was not aware of the existence of such cases.

1406. Dr. Good, in his Study of Medicine, mentions a patient who discharged this morbid substance for six weeks, and in tubes so perfect as to excite no small alarm in the attendants by whom it was noticed. He also quotes from Dr. Powell, who speaks of a case in which "tubes were passed, some of which were full half a yard in length, and of sufficient quantity to have lined the whole intestinal canal." Dr. Good considered the discharge a disease, which he called "*tubular diarrhœa;*" but he appears to have been wholly ignorant of its true character, and recommended the "milder preparations of mercury" to be used in such cases.

1407. False membrane does not only arise in consequence of disease, but is also produced by the use of purgatives, and the whole host of mineral, animal, and vegetable poisons, as calomel, tartar emetic, arsenic, aqua fortis, cantharides, opium, and digitalis. Medical men do not reflect, that by the administration of these poisons, they occasion a deranged or morbid condition of the stomach and bowels, which either retards the progress of recovery, or converts an acute disease into an obstinate chronic malady, for which they have no remedy. I have invariably observed, that patients who have been long in the hands of the diplomatised physicians, are exceedingly difficult to cure, and it appears to be almost impossible, in some cases, to restore the tone of the stomach and bowels. The false or adventitious membrane acquires so much firmness and tenacity, that it cannot be detached, excepting by a patient and thorough course of treatment. This accomplished, however, the patient speedily recovers.

APPEARANCE OF THE TONGUE.

1408. Although we may be greatly deceived in the pulse, as one of the signs of disease, an examination of the tongue is of considerable practical importance, inasmuch as it enables us to judge with tolerable accuracy of the condition of the stomach and bowels. Andral, however, and some other writers, have attempted to show that the tongue may present a healthy appearance, while the stomach and bowels are diseased; and they teach, therefore, that it is not to be regarded as an index to the condition of these organs. Beaumont, who had an opportunity of examining the interior of St. Martin's stomach, under all circumstances, and comparing its aspect with that of the tongue, inculcates a different opinion. He found that there was always an identity of appearance between these two organs, and says, "When a healthy state of the stomach was restored, the tongue invariably became clean."* It is not necessary that the tongue should be coated, to indicate disease in the stomach and bowels, for we all know that in inflammation of these organs, the tongue is often red, and clean. Dr. Marshall Hall observes that "the tongue is apt to become clean in protracted and severe cases of dyspepsia; but we are not to infer from this, that the stomach and bowels are exempt from disorder. In truth, I would rather see the tongue coated, than clean, and unnaturally red; for in the latter instance, it will generally be found, that no very decided impression has been made upon the disease, until a coat is developed. In low chronic cases, where there is not sufficient vitality to favor the operation of the medicine, a coat does not make its appearance, and the patient rarely experiences any other than temporary relief.

1409. The gradual manner in which the coat developes itself in some chronic diseases, is a matter of considerable interest. It is first observed during the operation of a *course of medicine*, and it may then disappear until the course is repeated; but at length it becomes firm and thick, particularly towards the root of the tongue, and is of a white, yellow, or brownish color. Ultimately it begins to soften and peel off, leaving the surface to which it was attached of a clean and natural appearance, and the patient, in the meantime, rapidly regains his health. During this period also, quantities of false membrane are found in the alvine discharges, and in some instances it is ejected from the stomach by vomiting, making its appearance in shreds, or patches, the latter of which are sometimes as large as the hand.

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* Beaumont's Experiments, p. 109. Plattsburgh, 1833.

1410. I have observed that in obstinate chronic affections, there is no assurance of a permanent cure, until the tongue becomes entirely clean. While the coat remains, therefore, the treatment should be continued; and even after the removal of the coat, a new one is liable to form, unless proper attention is paid to the diet, and an occasional stimulant and tonic employed to invigorate the system. To illustrate, I will mention a case which came under my observation, of a young man with epilepsy. At first his tongue was red, but after taking a few *courses of medicine*, a thick, brown coat was developed. He had daily paroxysms until the coat began to peel off, when they became less frequent, and finally ceased. His health being so much improved, he went into the country, where he indulged his appetite freely, and in a short time his epileptic attacks were renewed with increased violence. I saw him soon after this period, and found his tongue was as thickly coated as ever. He took two or three additional courses of medicine, which caused a separation of the coat, leaving the tongue clean, and the disease once more disappeared. The young man was twenty-two years old, and had been subject to epileptic attacks from his childhood.

1411. The tongue assumes various appearances, according to the nature of the malady which is present. In simple fever, it is usually covered with a thin, white coat. In typhus fever, the coat, at first, is also white, but gradually assumes a brown, or black appearance, according to the severity of the disease; while the tongue itself is frequently dry, swelled, and sometimes cracked, so as to bleed. The coat separates in some instances, before a cure is performed, disclosing ulcerated patches beneath. The same general appearance of the tongue is observable in some other diseases.

1412. In the incipient stage of scarlet fever, red points are occasionally seen projecting through the white coat; and some writers consider this as a distinguishing mark between scarlet fever and measles.

1413. In hectic fever, says Cullen, the tongue becomes free from fur, and appears very clean.

1414. A yellow coat on the tongue, accompanied with a bitter taste in the mouth, is generally attributed to disorder of the biliary organs.

1415. In inflammation of the stomach, or bowels, the tongue mostly assumes a deep red appearance, having the surface rough in some instances, and in others glazed. In dysentery, which consists of an inflammation of the lower or large intestines, the tongue is usually red along the edges, covered in the centre with

a dry, brown coat. In chronic inflammation of the stomach, or bowels, the tongue is of a much darker red, than in the acute form of the disease.

1416. When the tongue is tremulous, or pointed, it indicates an affection of the brain; and is one of the symptoms in the severer forms of typhus fever. A soft, flat, spreading tongue, is an evidence of great debility, and a gradual sinking of the vital powers.

1417. If the tongue is inclined to one side, it indicates a paralytic affection.

1418. A smooth and glossy tongue, is a very common symptom in lingering chronic complaints.

PRACTICE OF MEDICINE.

FOOD FOR THE SICK.

1419. When the stomach is much disordered, solid food digests very imperfectly, if at all, and on this account, light nourishing broths, liquids, vegetable jellies, and other similar preparations should be used, until the digestive powers are re-established. The following receipts will serve as a guide to those who have charge of the sick.

1420. Milk Porridge. Take two table-spoonfuls of wheat flour, and beat it into a paste with cold water; pour this gradually into a quart of boiling water; season with salt, continue the boiling a few minutes, skim, and pour in a tea-cupful of milk, slowly, just as you are about to take it from the fire. This is better for the sick than when it is made very rich with milk; and if the digestive organs are extremely feeble, the quantity of flour may be reduced one half. It is strengthening to the stomach, and may be given freely during a course of medicine, especially just after vomiting. It is generally relished by patients, and may be sweetened to suit the taste. The addition of black pepper, or cayenne, renders it still more beneficial. If the *unbolted wheat meal* (1188) can be obtained, it should be substituted for fine flour, particularly if the bowels are in a languid or torpid condition.

1421. Beef Tea. Fill a quart porter bottle two-thirds full of warm water, and put into it half a pound of fresh lean beef, cut into thin slices; place the bottle in a kettle of boiling water, and let it remain for three quarters of an hour, when the liquid may be poured off, and more water added to extract the remaining strength of the meat. This tea, seasoned with pepper and salt, and administered warm, is strengthening to a weak patient; and in the exhaustion attendant on bilious, scarlet, or typhus fever, may be used with great benefit.

1422. Chicken Tea. This is made in the same way as the above, using only the lean part of the chicken. Season with pepper and salt. It is light, nourishing, and very useful for weak patients, but is not so beneficial as beef tea, especially in fevers.

1423. Wine Whey. Put a pint of new milk into a vessel over the fire; as soon as it begins to boil, dash in two wine-glassfuls of Muscat or Greek wine, and take the vessel off. The whey, which will separate from the curd, may be sweetened with loaf sugar, and flavored with any of the spices. This is a gentle stimulant, useful in debility, and recovery from long sickness. The wines I have mentioned are preferable to either Sherry, or Madeira, because they contain less alcohol.

1424. Unbolted Wheat Meal Gruel. Take a table-spoonful of the meal, (1188) and beat it into a paste with cold water; add salt to the taste, and stir it slowly into a pint of boiling water; continue the boiling four or five minutes, and skim. Milk may be added, if desirable, as in the directions for milk porridge. This is highly useful in dyspepsia, costiveness, and all cases of a weak or languid state of the digestive organs. It may be given also, during a course of medicine, and is preferable, as I have said, to the porridge made with superfine flour.

1425. Oat Meal Gruel. Take three table-spoonfuls of oat meal, a quart of water, and a handful of raisins; simmer over a slow fire for two or three hours, keeping the vessel covered. This is soothing to the bowels, and useful in diarrhœa, and dysentery.

1426. Indian Meal Gruel. Boil a quart of water, add a little salt, and stir in two table-spoonfuls of the meal, as in making mush or hasty pudding. Boil it fifteen or twenty minutes, and add any desirable quantity of milk. This gruel is not only good for the sick, but may be used instead of tea or coffee. It will answer very well without milk.

1427. Sago Gruel. Stir two table-spoonfuls of pearl sago into a pint of boiling water, and season with salt to suit the taste. Boil until it is converted into a thickish jelly, which will be in ten or fifteen minutes. It may be sweetened with sugar if the patient desires. This is soothing and grateful in irritation of the stomach and bowels.

1428. Indian Tea. Pour a pint of boiling water on a table-spoonful of Indian meal. Add salt if desired. When cool and settled, it is transparent. It has a pleasant taste, and will remain in the stomach, when other drinks are rejected.

1429. Crust Coffee. Toast two or three thin slices of unbolted wheat bread until they are brown and hard; put them into boiling water, with sugar and milk; continue the boiling five or six minutes, by which time the coffee will be fit for use. This is a nourishing and delicious beverage, but rather too rich for the sick.

1430. Rice Coffee. Burn rice as you do coffee, and reduce it to a powder; take a heaping tea-spoonful of this, and add half a tea-cupful of boiling water; when settled, pour off the coffee, and sweeten with sugar. Used as a medicine, this is a dose for an infant. For an adult, a table-spoonful of the powder may be added to a tea-cupful of water. It is pleasant to the taste, and somewhat astringent. It is beneficial in acidity of the stomach, and the bowel complaints of children, gradually diminishing the discharges, and rendering them less green and sour. It is better to use a strong infusion of the coffee, than to dilute it, and administer a larger quantity.

1431. Slippery Elm and Milk. Beat a tea-spoonful of powdered elm bark into a paste, with water, adding a small portion of salt, and stir it into a pint of milk just beginning to boil. Take the milk from the fire, and continue the stirring two or three minutes, until the elm is dissolved. This is very useful in diarrhœa, and the bowel complaints of children. It affords a nourishing diet for infants, weaned from the breast, and renders them fat, and healthy. If the infant is very young, the milk should be diluted with one third water.

1432. Tapioca Jelly. Pick the tapioca clean, soak it five or six hours in water, and spread it in a broad dish, pouring on additional water until it covers the tapioca an inch in depth. Simmer over a slow fire until the jelly is formed. This contains a

large amount of nutriment, and is easy of digestion. It may be eaten with sugar and milk. Weak patients should begin with the jelly quite fluid, and as they gain strength, it may be taken a little more solid. If milk disagrees with the individual it should be omitted.

1433. Arrow-root Jelly. This is made by mixing half a tea-spoonful of arrow-root, with a tea-cupful of boiling water. Season with nutmeg and loaf sugar. This sits lightly on the stomach, and is very good for children. Some are in the habit of boiling the arrow-root four or five minutes. Half a table-spoonful of cream, added to a tea-cupful of the jelly, while hot, makes it much more acceptable to children, who have been accustomed to milk.

1434. Rice Jelly. Take a quarter of a pound of ground rice, and double the quantity of loaf sugar; boil them in a suitable quantity of water, until the whole has acquired a proper consistence. The jelly may be eaten with sugar and milk.

1435. Wheat Jelly. Take of wheat, in its natural state, any desirable quantity; soak it twelve hours in soft water, and boil it four hours, allowing the water to evaporate, excepting enough to form the wheat into a jelly. This may be eaten with sugar, or molasses, and is an invaluable article for the sick, and convalescent. I know of no preparation that I am disposed to recommend more highly. It is agreeable to the taste, does not oppress the stomach, and is very nourishing. It also serves to regulate the bowels, without possessing any of the objectionable properties of a purgative. Mr. Graham, in an account which he gave of his recent sickness, says, "Wheat thus prepared was very grateful to the taste, and incomparably the most salutary nourishment I took during my convalescence. Within twenty-four hours after I commenced the use of it, I had a natural movement of the bowels, and from that time to the present, have had no need of aperient medicine."*

1436. Slippery Elm Custard. Put a tea-spoonful of slippery elm, two of loaf sugar, and a small portion of cinnamon into a tea-cup, and fill it nearly full of boiling water. Stir for four or five minutes, till a thick jelly is formed. Wine and a little nutmeg may be added, if desirable. This is good for consumptive people, and all persons in a weak condition of body.

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* Health Journal, edited by Mrs. Gove, vol. i. No. 25.

1437. Blanc Mange. Wash half an ounce of Irish moss in water as hot as the hand can bear until it becomes slimy, and rinse it in water about blood heat; (1292) add the moss, together with two lemon peels, cut into thin slices, and a small portion of salt, to a quart of milk; put these ingredients over a slow fire, and stir constantly until the liquid becomes of the consistence of thick cream, taking care that it does not boil; strain through a cloth, or fine sieve, and pour it into moulds or cups to harden, previously dipping them into cold water. Instead of the lemon peel, it may be flavored with *Preston's extract of lemon*, adding three quarters of a table-spoonful of it after straining. The blanc mange is turned upon a plate, and eaten with sugar and milk. It may be made with water, instead of milk, and in this form is relished by many, when the stomach is too irritable to bear other kinds of food.

DOSE OF MEDICINES.

1438. As the medicines recommended in this work are free from any deleterious properties, the same precision is not requisite with regard to the dose, as when poisonous drugs are employed. Remedies which act in harmony with the vital principle, are incapable of doing injury, if administered with common judgment, or prudence, and a slight error in the quantity of a dose, therefore, or the mistake of one article for another, is not accompanied with fatal consequences, as happens so frequently in the practice of the diplomatised physicians. It is necessary, notwithstanding, that we should be governed by some general rules, for the dose of medicines is varied according to age, sex, temperament, habit, peculiarities in diet, and other circumstances. The following table is a general outline of doses proportioned to the age, though instances may occur in which it will be necessary to depart materially from this standard.

If the dose for an adult is one tea-spoonful,
A youth twelve years old may take half a tea-spoonful,
A child six years old one third of a tea-spoonful,
And an infant a year old one tenth of a tea-spoonful.

1439. In determining the quantity of medicine for a dose, we must be satisfied that it is perfectly pure. Cayenne, for example is often adulterated with worthless barks, or Indian meal, and of course its strength is considerably diminished. The same remark is applicable to many other medicines, which are adulterated in a great variety of ways.

1440. Women, from their greater sensibility, or habits of life, generally require a smaller dose than men.

1441. Persons of a sanguine temperament are more easily affected by medicine than the cold or phlegmatic.

1442. There are many peculiarities and circumstances which control the action of medicines. I know a lady upon whom a tea-spoonful of the tincture of lobelia will operate as a powerful emetic. Vegetable eaters do not require half as much medicine as those who indulge freely in animal food. I have tested this matter in repeated instances, and have been astonished at the effect produced by very small doses. Those who avoid ardent spirits, do not require as much medicine as the intemperate. If the brain is affected, as in the delirium of typhus fever, medicine is very tardy in its operation. It is slow to produce the desired effect, also, where the stomach and intestines are lined with false membrane, (1393, *et seq.*) as is always the case with those who have been drugged with the poisons of the medical faculty.

BATHING.

1443. Bathing, in some form or other, has been in high repute, from the earliest periods of history, as a means of promoting health. We are told that Pharaoh's daughter, and her attendant maidens, went down to the Nile to bathe. Elisha the prophet commanded Naaman the leper to wash seven times in the river Jordan. Moses the law-giver enjoined the frequent use of bathing; and the Jewish priests always washed their bodies before officiating in their sacred office.

1444. In Egypt, baths were erected at the public expense.

1445. History informs us, that the Greeks and Romans were remarkably fond of bathing. The latter constructed baths of the most magnificent description. Those of Caracalla are described as having been embellished with two hundred pillars, and furnished with sixteen hundred seats, capable of containing three thousand people.

1446. Among the Mahommedans, says Mr. Buckingham, the oriental traveller, baths are as numerous as their mosques. He doubts, if in their cities a single street can be found, without one or more of them. They all bathe once a day, at least. There is a general conviction in the East, that personal cleanliness is favorable to morality; while on the other hand, vice and filth naturally go together. Baths are to be had from a single para, in value about one fourth of our cents, to four or five dollars. In this country, however, bathing seems to be neglected, or the

people are too much engaged in other pursuits to give it their attention.

1447. Those who are acquainted with the functions of the skin, will acknowledge the importance of bathing. It is the seat of perspiration, both sensible and insensible, (41) and is the principal channel through which the useless or worn-out matter of the system makes its escape. It is estimated that two thirds of all we eat and drink, pass out of the body by the skin, leaving only one third to be discharged by the bowels, the lungs, and the kidneys. (42.) How important is it, therefore, to preserve the skin in a healthy and vigorous state, for if it does not perform its functions properly, the matter which should be eliminated through the pores, is suffered to remain in the circulation, and is deposited in the different organs and tissues of the body, giving rise to fevers, inflammations, consumptions, and diseases of every name and character.

1448. Cold Bathing. This is highly conducive to health, if employed under favorable circumstances. It is never beneficial, excepting when followed by a warm glow of the skin. For this reason it is generally pernicious to those of a cold habit, and a feeble or languid circulation. The temperature of the water should be regulated according to the feelings of the individual. What is cold to one, may be agreeable and pleasant to another.

1449. The most suitable time for bathing is in the morning, when the body is strong and vigorous, and not after it has been enfeebled by hard labor, or over exertion. It should be heated by exercise also, before going into the water. The idea is generally inculcated that persons should not attempt to bathe while in a perspiration, but this is a serious, and sometimes a fatal error. The more free the perspiration, the greater is the safety in cold bathing. The Roman youth were in the habit of plunging from the Campus Martius into the Tiber, and swimming across it immediately after the most violent gymnastic exercises. The Russians, and North American Indians, remain in their sweating houses until they are in a profuse perspiration, then roll in the snow, or plunge into a river in which the ice has been broken. Dr. Bell very correctly observes, in his work on Baths, that "the best means of supporting great cold is to be previously subjected to high heat."

1450. I have found great advantage in supplying myself with a small bottle of pepper sauce, and taking a portion of it just before going in to bathe. It invigorates the system, and causes a warm, pleasant glow of the skin. Persons should not remain too long in the water, as this is liable to cause a determination of blood

from the surface to the centre of the body, and the accumulation of this fluid in the internal organs, may give rise to some dangerous form of disease.

1451. Shower Bath. This is decidedly the best and most agreeable way of applying cold water to the body; and it should be done in the morning as soon as the individual is out of bed, or after he has been heated by a brisk walk, or other exercise. Those who are accustomed to the shower bath, consider it their greatest luxury, and continue to use it during the coldest weather of winter. The quantity of water to be employed, must be determined by circumstances. Those who are not very strong or vigorous will be satisfied with a quart, while the robust and plethoric often require two or three gallons. The temperature of the water also, is varied according to individual peculiarities. There are some who use it several degrees below that of ordinary spring water, while others employ it of an almost icy coldness. After the bath, the body should be wiped as speedily as possible, and rubbed with a coarse towel, or flesh brush, which produces a pleasant feeling of warmth.

1452. The water of the shower bath should be passed through a perforated board, or piece of zinc, which allows it to come in contact with every part of the body at nearly the same moment. This produces a sudden shock, which is followed by strong reaction, and the blood returning to the skin from which it has been momentarily driven, imparts to it a warm, pleasant glow.

1453. The shower bath invigorates the system, strengthens the digestive organs, equalizes the circulation, and enables those who use it to encounter the vicissitudes of heat and cold with but little inconvenience, or risk to health. In the hot weather of summer, it is truly refreshing, as well as beneficial. In many obstinate chronic disorders, it is productive of the greatest advantage. It should never be employed, excepting where it has a tendency to invigorate, and is followed by a warm glow of the skin. Under other circumstances, it is manifestly injurious; and I have known the health to be seriously impaired by its injudicious use. Preceded by the vapor bath, however, there is no objection to its employment, as will be explained hereafter.

1454. Sponge Bath. This is beneficial where the individual is chilled by the ordinary shower bath. It consists of the application of water to the body with a sponge, followed by friction with a coarse towel, or flesh brush, as already mentioned. A bowl-ful of water will be sufficient, and if care is observed, the floor or carpet need not be wetted.

1455. Hand Bath. This does not differ from the preceding, excepting that the water is applied with the hands, instead of a sponge. If an individual possesses but little animal heat, it is preferable to the sponge bath, particularly in cold weather, as the warmth and friction of the hands prevent the body from becoming chilled. To obviate this difficulty, also, the water may be applied to the trunk of the body, and the skin wiped perfectly dry, before it is applied to the extremities. Friction with a coarse towel, or flesh brush, should never be omitted as a concluding part of the process. Patients in feeble health, who may deem it advisable to employ the hand bath in the winter season, should be furnished with a warm apartment, as by this precaution, a tendency to chilliness will be counteracted. Preceding the bath with a dose of cayenne, or composition, is always beneficial, and should never be dispensed with.

1456. Warm Bathing. Houses at the present day are rarely constructed with any conveniences for bathing, notwithstanding it is of the utmost importance to health. If we visit the mansions of the rich, we are dazzled with fine apartments, and elegant furniture, but may look in vain for a simple bathing apparatus. The poet has said, "E'en from the body's purity, the mind receives a secret, sympathetic aid," but this noble precept seems to have been neglected by people of the present day. If an individual should find his way to a bath tub two or three times a year, he thinks he has performed wonders and prides himself upon his personal cleanliness. If, however, the face and hands require to be washed every morning, the entire surface of the body should certainly be cleansed at least once a week. We should do well to imitate the practice of some of our heathen brethren, who, however benighted they may be in other respects, are in the habit of bathing two or three times a week, if not oftener, and paying the strictest attention to the cleanliness of their persons. People in general, have no idea of the impurities with which their skin is loaded, and if they could be induced to pass a flesh brush over it, they would be startled, perhaps, at the cloud of white or scaly looking particles, which would be detached. It has been said that a Frenchman is often found with a clean skin under a dirty shirt; but there are those who reverse this rule, and are found with a dirty skin under a clean shirt.

1457. Dr. Bell quotes a lady of fashion as saying, that "the frequent use of warm baths is not more grateful to the sense, than salutary to the health, and to beauty. By such ablution, all accidental corporeal impurities are thrown off; cutaneous obstruc-

tions removed; and while the surface of the body is preserved in its original brightness, many threatening disorders are removed, or prevented. * * *. By such means the women of the East render their skin softer than that of the tenderest babes in this climate, and preserve the health which sedentary confinement would otherwise destroy."

1458. The celebrated Darwin remarks, "Those who are past the meridian of life, and have dry skins, accompanied with emaciation, will find the use of the warm bath for half an hour twice a week, eminently serviceable in retarding the advances of age." Darwin himself, at the suggestion of Dr. Franklin, acted upon this precept, and used the warm bath twice a week until near his death, which occurred in his seventy first year.

1459. I would recommend the warm bath, however, with a view to cleanliness, and the preservation of health, rather than as an agent in the treatment of disease, for in this respect, it is infinitely inferior to the vapor bath. Water being a dense medium, it presses heavily on the surface, and interferes, to a certain extent, with the escape of the perspirable matter, which should be eliminated through the pores; but no such objection can be urged against the vapor bath, for it affords a light, pleasant medium, and favors the passage of the perspirable fluid through its appropriate channels. Besides, in the warm bath, we seldom have a temperature higher than ninety or ninety five degrees, which is several degrees colder than the blood, and though the water produces an agreeable sensation of warmth, it is constantly abstracting large portions of the animal heat. This I conceive to be a prominent objection to the warm water bath, particularly in cases of debility, or loss of vital action, for it tends in most instances to increase the difficulty. The vapor bath, on the other hand, which we seldom employ at a lower temperature than one hundred and ten degrees, rarely fails, if properly administered, to invigorate the most feeble and delicate patient, and may be used without any apprehension of danger.

1460. There is no question that the warm water bath, employed in a casual manner for the removal of disease, is often productive of more harm than good; and invalids very frequently complain that they have been injured by its application. It appears to debilitate the system, and increase its susceptibility to the effects of cold. Followed by the shower bath, however, the moment the patient rises from the water, injurious consequences are not so likely to ensue, for the shower gives activity to the circulation, invigorates the body, and greatly diminishes the chances of taking cold. I am happy to say that the public baths in Boston have been so constructed, within the last few years,

that an individual may let down a gentle shower of cold water upon his person, immediately upon rising from the bath-tub.

1461. It will be recollected that I do not object to the warm bath as a means of promoting health, for if regularly employed once or twice a week, it will be of eminent service.

VAPOR BATH.

1462. The vapor bath has been extensively used in many of the European countries for several centuries. It is said that the Finlanders will remain for half an hour in vapor at 167 degrees of Fahrenheit, and then pass immediately into the freezing air, without experiencing the slightest inconvenience. Dr. Bell, in his work on Baths, observes, that if travellers happen to arrive at the villages of these people, while they are engaged in bathing, they will go at once to assist in taking care of the horses, without any covering whatever, while the strangers, notwithstanding they are wrapped in furs, sit shivering in the cold.

1463. The Russians make use of the vapor bath at least once a week, and sometimes much oftener. They vary the temperature from 120 to 160 degrees; and remain in the bath an hour or two, when they let down a shower of cold water upon them from the ceiling by means of a cord and valve. This, says Dr. Traill, in his account of the Russian vapor bath, is highly exhilarating and refreshing.

1464. The Russians are in the habit of leaving the vapor bath while in a profuse perspiration, and rolling in the snow, or if a river happens to be near, they will plunge into it, entirely regardless of the severity of the weather. Instead of being injured by this practice, they are rendered more vigorous and healthy, and it cannot be denied that they are more free from rheumatism, and consumption, than the people of more highly favored climates.

1465. The North American Indians are well acquainted with the effects of the vapor bath. Among the tribes on the Rocky Mountains, according to Lewis and Clark, it is very uncommon for a man to bathe alone; he is generally accompanied by one or sometimes several of his acquaintances; indeed, it is so essentially a social enjoyment, that to decline going into the bath when invited by a friend, is one of the highest indignities that can be offered. The frontier Indians construct a bath by bending willows over at the top, and covering them with skins. The patient sits in this, until by means of heated stones and water, he has

perspired sufficiently. These baths are almost universally in the neighborhood of streams, into which the Indians plunge immediately on coming out of the vapor bath; and sometimes they subject themselves to a second perspiration. The bath is employed either for pleasure or health, and is used indiscriminately as a remedy in all kinds of disease.*

1466. Major Long, who made an expedition to the Rocky Mountains subsequent to the time of Lewis and Clark, informs us, also, that the Indian *sweating baths*, as he terms them, are in high repute for the cure of many disorders. He remarks, that they are generally constructed near the edge of a water course, and formed of pliant branches of trees, stuck into the ground in a circle, bent over at the top, and covered in every part with bison ropes. Some of them contain only one person, and others four or five. The invalid enters with a kettle of water and some heated stones, on which the water is sprinkled until the requisite degree of steam is produced. When it is thought that the perspiration is sufficiently profuse, the patient is taken out and plunged into the water, previously breaking the ice, if the stream is frozen. He is not subjected a second time to the action of the steam, but covers himself with his robe, and returns home.

1467. Lewis and Clark mention a remarkable cure which was performed with the vapor bath, during their expedition. One of their men had so great a weakness in his loins, that he could not walk, nor even sit upright, without extreme pain. They exhausted the resources of their art upon him in vain, and at length, at the suggestion of an Indian hunter, and the request of the patient himself, they placed him in a vapor bath, with the steam as hot as it could be borne. In twenty minutes he was taken out, plunged twice in rapid succession into cold water, and returned to the bath. During all this time he drank copiously of horsemint tea. At the end of three quarters of an hour, he was again withdrawn, carefully wrapped, and suffered to cool gradually. The morning after the operation, he was able to walk, and was nearly free from pain.

1468. An Indian chief of considerable rank, who had lost the use of his limbs, was brought to Lewis and Clark in a canoe, for the purpose of being cured. They attempted to sweat him, but he was too weak to sit in the bath; they advised him to go home, undergo frequent perspirations in a sweating house, and drink large quantities of horsemint tea. The Indians, however, who accompanied the chief, were so anxious to have the operation of

* Lewis and Clark's Expedition to the Sources of the Missouri, &c., performed in 1804–5–6.

sweating performed under the inspection of Lewis and Clark, that the latter determined to make a second attempt. This they accordingly did, and a moderate perspiration was produced. The next day the chief was able to use his arms, felt better than he had done for many months, and set up the greater part of the time. The day following he found himself rapidly recovering, having strength sufficient to wash his face for the first time during a twelvemonth. The sweating was not repeated on account of the rainy weather. The succeeding day, however, a profuse perspiration was induced, and the patient was able to move one of his legs and thighs, and some of his toes, the fingers and arms having been nearly restored to their original pliancy. From this period, he gradually recovered his health, and the use of his limbs. I mention these facts to show that the vapor bath, whether employed in the wilderness among savage tribes, or in the civilized and polished circles of society, is a friend to the afflicted, and exercises a renovating and most salutary influence.

1469. Some of the Indian tribes reverse the order of bathing as it is practised among the whites at the present day, and conclude with the warm instead of the cold bath. We are informed by Lewis and Clark, that their expedition encamped near the warm springs along the ridges of the Rocky Mountains, and that the Indians formed one of these into a bath, which was so hot that Captain Lewis could not remain in it more than nineteen minutes. The Indians went into the bath thus constructed, continued as long as they could bear the heat, and then plunged into a stream, which was at that time of an icy coldness. They would repeat the process several times a day, and it is worthy of remark that they always terminated with the warm bath.

1470. The diplomatised physicians have used their utmost endeavors to bring the vapor bath into disrepute; but notwithstanding their gross and flagrant misrepresentations, it has gradually won its way to public favor, and there is now abundant evidence to satisfy the unprejudiced mind, that it is an invaluable agent in the treatment of disease. Many distinguished writers, also, have spoken of it in terms of high commendation. Dr. Combe, in his work on Physiology, remarks, "The vapor bath is attended by the very best effects, particularly in chronic ailments, and there can be no question that its action is chiefly on the skin, and through that medium on the nervous system. As a means of determining to the surface, promoting cutaneous exhalation, and equalizing the circulation, it is second to no remedy now in use; and consequently, in a variety of affections which this

process is calculated to relieve, it may be employed with every prospect of advantage."

1471. "Of all Turkish remedies," says Dr. Madden, "the vapor bath is the first and most efficacious in rheumatic and cuticular diseases. I have seen them removed in one fourth part of the time in which they are commonly cured with us. * * * As a luxury, I cannot better describe it than in the words of Sir John Sinclair. 'If life be nothing but a brief succession of our ideas, the rapidity with which they now pass through the mind would induce one to believe, that, in the few short minutes he has spent in the bath, he has lived a number of years.'"*

1472. Major Skinner, in his Adventures in the East, says, "One of the most pleasing effects of the vapor bath, is the marble-like polish which it imparts to the skin; there is the consciousness too, that among the many impurities of an Eastern city, you can bid defiance to them all."

1473. The Eclectic Journal of Medicine, published in connexion with the Select Medical Library, contains a review of a work on baths, in which the writer says, "To the war between Napoleon and Russia is western Europe indebted, if for nothing else, to the introduction of vapor baths. Russian soldiers having constructed them in the north of Prussia, some of the Prussian physicians were induced to observe the effects of this new fashion of bathing. They soon found that it cured various diseases, such as rheumatism, and cutaneous and nervous affections, and were not slow in giving it notoriety throughout Germany, by means of various publications. The King of Prussia caused a bath to be constructed at his palace; and in 1818, the Princess Marianne, sister-in-law of this sovereign, was present at the opening of the first public vapor bath in Berlin, and allowed it to receive her name."

1474. Doctors Reil, Schmidt, and Mangold, Prussian physicians, are cited by the author of the work in question, in confirmation of the safety of vapor baths as a luxury, and of their efficacy in the removal of disease. Dr. Schmidt says his own son, not quite six years old, is never happier than in the enjoyment of a vapor bath, and adds that this mode of bathing is as beneficial to subjects in advanced age, as to those in early childhood.

1475. The same writer remarks, "The vapor bath may be used with decided advantage in all seasons, as it is in Russia, and other countries in Asia. It is a vulgar error, contradicted by general experience, to suppose that vapor, or warm bathing, in gen-

* Travels in Turkey, Egypt, Nubia, and Palestine. Philadelphia, 1830.

eral, is contra-indicated in winter, as disposing those who bathe to contract colds."

1476. The remark of Darwin, that the warm bath is serviceable in retarding the advances of age, (1458) is still more applicable to the vapor bath, the latter having a remarkably invigorating effect on the old and infirm.

1477. Mungo Park, in allusion to the Mandingoes, says—"On the first attack of a fever, when the patient complains of cold, he is frequently placed in a sort of vapor bath, which commonly produces a profuse perspiration, and wonderfully relieves the sufferer.*

1578. Assalina, an Italian physician, published a work on vapor bathing in 1820, in which he detailed its advantages in the treatment of many diseases. He introduced portable vapor baths into common use in Munich, and invented an apparatus by which he was enabled to apply vapor to the eyes, ears, lungs, the breasts of females, and other parts that were in a state of inflammation. The application of vapor to swelled breasts, he found of the most essential service.

1479. The vapor bath imparts its caloric to the blood, and in a low or feeble state of the body, renders the circulation more active and vigorous. The principle upon which it accomplishes this, has been admirably explained by Magendie. He has quoted the experiments of an eminent philosopher† to prove that the movement of a fluid through a tube is rapid in proportion to its temperature. Cold water was injected into the artery of a dog, which returned by the corresponding vein in a specified time; the same quantity of lukewarm water returned eighteen times quicker; and *hot water* returned thirty two times quicker than the *lukewarm*. The inference of Magendie was, that the circulation of the blood is feeble in proportion as its temperature sinks below the natural standard, but when the vapor bath is employed, its heat or caloric is communicated to the blood, as may be ascertained by placing a thermometer under the tongue, and the circulation becomes active in every part of the body. He observes that cold damp weather is sure to bring on fits of suffocation in persons with diseases of the heart, but if the atmospheric temperature undergoes a trifling rise, the circulation becomes freer, and the unpleasant symptoms disappear. The sufferers themselves, he continues, are so perfectly conscious of this, that, when you prescribe for them, they will tell you that a little sunshine would do them infinitely more good than all your drugs.

* Travels into the Interior Districts of Africa, &c.

† Hales.

1480. It is frequently said by the opponents of the vapor bath, that it occasions debility. There does not appear to be any ground, however, for this conclusion. The perspirable fluid consists principally of the serum or watery portion of the blood, which is incapable of nourishing the body, and which is speedily replaced either by drinks taken into the stomach, or by cutaneous absorption of the vapor itself. The loss of this fluid therefore, abstractly considered, cannot be regarded as a cause of debility, or we should find the laboring man, who perspires freely from morning till night, becoming weak and emaciated. We expect different results from blood-letting, because in this, the rich or nutritious part of the blood is withdrawn as well as its serous or watery portion, and the system languishes for the want of its appropriate nourishment. I have yet to learn, however, that debility will ensue from perspiration produced by the vapor bath, independent of a diseased or morbid condition of the body. For example, we know that in fever, or inflammation, there is a sort of fictitious strength, which disappears when the disease is subdued, and leaves the patient in a state of languor or debility. Now the vapor bath, from its tendency to equalize the circulation, is a powerful agent in subduing fever, or inflammation, and may thereby, in an indirect manner, prove a source of debility. Perspiration of itself, however, unconnected with disease, does not appear to exercise a depressing influence, or the Russians, Finlanders, Turks, and North American Indians, who make such free use of the bath, would be the most feeble and emaciated people in the world. Dr. Traill, in his description of the Russian vapor bath, to which I have already alluded, conveys the impression, that although it may occasion a free perspiration, it does not produce debility. He went into the bath himself, accompanied by some friends, and remarks, "In the corner opposite to the furnace is a reservoir of cold water, into which, during our stay in the bath, the person who manages it, frequently plunged to cool his surface, a precaution not unnecessary for an individual who is exposed eight hours daily, stark naked, to a temperature quite oppressive to the uninitiated. Yet this exposure and alternation cannot be unhealthy, for I never saw a more *athletic man than this person*, who informed me that he had been constantly engaged in his occupation for *sixteen or eighteen months.*"

1481. Dr. Combe, the physiologist, in canvassing the subject of the vapor bath, says, "The prevalent fear of catching cold, which deters many from using the vapor bath, even more than from warm bathing, is founded on a false analogy between its effects and those of profuse perspiration from exercise* or illness.

* The author alludes, undoubtedly, to *severe* or *fatiguing* exercise.

The latter weakens the body, and, by diminishing the power of reaction, renders it susceptible of injury from sudden changes of temperature. But the effect of the vapor bath properly administered is very different. When not too warm, or too long continued, it increases instead of exhausting the strength, and by exciting the vital action of the skin, gives rise to a power of reaction which enables it to resist cold better than before."*

1482. Uses of the Vapor Bath. The fact that two thirds of our food and drink pass out of the body through the pores, as I have already stated, (42, 1447) leaving only one third to be discharged through other channels, is sufficient evidence of the value of the vapor bath as a remedial agent. It determines the blood to the surface of the body, warms and invigorates the whole system, and produces a healthy, natural perspiration, which serves to convey from the circulating fluid the various impurities with which it is loaded. There are many difficult cases in which a cure could not be effected without its agency. It should never be omitted, where the medicines, of themselves, are insufficient to produce a moist condition of the skin. It communicates a portion of its heat or caloric to the blood, rendering the circulation more active and vigorous, as I have previously stated, (1479) and it is on this account, that it possesses such wonderful efficacy in suspended animation, stupor, and the low stages of disease.

1483. In cutaneous affections, and all febrile, or inflammatory attacks, the vapor bath is particularly serviceable—a few hours being sufficient, in conjunction with the stimulating medicines, to break up an ordinary fever. It diminishes swellings, relaxes inflamed parts, and allays pain and irritation. In stiffness of the joints, it cannot be too highly praised. Administered previous to the cold stage of ague and fever, together with an injection, and a portion of cayenne and bayberry tea, it will sometimes prevent the paroxysm, or at least greatly diminish its violence. It has a soothing influence on the nerves, and is highly useful in restlessness, and wandering pains. Administered at bed time, it will generally procure a good night's rest. Employed in this way, it is also the best remedy with which I am acquainted, for the cold and exhausting night sweats which attend consumption. In hysteria, colic, cramps of the stomach, convulsions, croup, asthma, and pains of the bladder, or kidneys, it has been tested too frequently to need any recommendation here. A wiry or feeble pulse becomes full, soft, and regular under its influence, and hence

* Principles of Physiology. New York, 1838.

its value in inflammation of the lungs, or of any other internal organ; it invites the blood to the surface of the body, and thereby relieves the patient of his pains and sufferings. For the same reason, it is equally beneficial in diarrhœa, and dysentery, and should not be omitted in these complaints, where the attacks are severe.

1484. The excessive vomiting which takes place in cholera, and some other diseases, is speedily checked by the vapor bath, together with a stimulating injection, and two or three doses of pepper sauce, or cayenne tea. Sydenham observes in one of his works, that he could not overcome the vomiting in plague, excepting by external means applied to produce a sweat or determination to the surface of the body.

1485. Ulcers are greatly benefited by the local application of vapor, two or three times a day, as it promotes a healthy action in the minute vessels, and disposes the parts to heal.

1486. In falls, bruises, and all accidental injuries, the vapor bath is a sovereign remedy, and should be substituted for bloodletting, which only weakens the system, and retards the efforts of nature in repairing the injury. It should be used in conjunction with stimulating medicines, so as to keep a gentle perspiration, until the pain, soreness, or inflammation abates. Tonics and nourishing food will then be sufficient to complete the cure.

1487. Rheumatism appears to be one of those diseases over which the vapor bath exercises a sort of magical influence. I have known a single application of it, with a few doses of cayenne, or composition, to effect a cure in very obstinate cases, though, generally speaking, a few *courses of medicine* are required.

1488. In suspended animation, the bath is a very important agent. It rarifies or lightens the air with which the patient is surrounded, and promotes a determination to the surface of the body, without which it would be impossible to revive the dormant powers of life. Humboldt says, that in ascending mountains the heart beats violently, and the blood rushes forcibly into the vessels of the skin, in consequence of the diminished pressure of the atmosphere; and it is on this principle that we employ the vapor bath in suspended animation. The pressure of the atmosphere being diminished, the heart is enabled to propel the blood to the different parts of the body, which it could not do under other circumstances, and a restoration to life is the consequence. The usual mode of applying vapor in suspended animation, is to cover the patient with a quilt or blanket, and place a heated stone, wrapped in a damp cloth, at his feet, administering the antispasmodic tincture, or some other appropriate medicine. The vapor must be increased gradually, or the patient will be oppressed, and a recovery fail to take place. It is better to commence with a single

stone, as I have directed, and increase the number as circumstances require.

1489. The bath is an invaluable agent in reducing fractures and dislocations, and if sufficiently understood, would supersede the employment of brute force, and murderous pulleys. It relaxes the muscles, and produces a wonderful pliancy of the joints. Dr. Madden says, "I have trembled to see the Turks dislocate the wrist and shoulder joints, and reduce them in a moment."* This they were enabled to do by "twisting and kneading" their limbs in the vapor bath.

1490. Instances occur in which the blood-vessels of the skin are so completely obstructed, that the bath cannot be used without considerable preparatory treatment. I was called to a case of this description, in which the patient, a gentlemen, had been for several months under the care of the routine physicians. Among other poisons, he had taken large quantities of digitalis, and so little blood found its way to the surface, that he felt chilly in the hottest days of summer. The bath could not be used, because it produced a violent determination to the head. Heated stones, wrapped in damp cloths, were placed about the patient, in bed, and composition tea, with a portion of lobelia, given in small, and frequently repeated doses. By pursuing this treatment for three or four days, a free circulation was established, the chilliness disappeared, the skin became warm, and I had no difficulty in administering the vapor bath, together with a thorough *course of medicine.*

1491. The frequent use of the bath is of great service to those who are much exposed to a very cold atmosphere. It keeps the circulation active, and preserves the warmth of the body. In Captain Parry's voyage to the north pole, it was used by several of the crew, and those who employed it previously to taking their stations on deck, could remain a much longer time than others who refused to avail themselves of its benefits.

1492. There are many ladies in Philadelphia, and I believe in other cities, who now use the vapor bath to improve the complexion; and the velvet-like softness and healthful glow which it imparts to the skin, proves it to be the best cosmetic in the world.

1493. The perspirable matter which is discharged in the bath, is sometimes very offensive, and is capable of communicating disease. The sick room should be well ventilated in such cases, and the utmost cleanliness observed in every respect. I knew a

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* Travels in Turkey, Egypt, Nubia, and Palestine, p. 51. Philadelphia, 1830.

woman who was salivated by washing the clothes of an infirmary patient, who had taken considerable quantities of calomel.

1494. In the application of vapor to the body, care should be observed that it is of a proper temperature. Generally speaking, the patient's feelings are a sufficient guide in this matter, but in case of a palsied limb, where there is but little sensibility, the skin is sometimes blistered by vapor at a comparatively low temperature. I knew a patient whose foot was badly scalded from the cause which I have named. So little sensibility was there in the foot, that he was not conscious of having received any injury. It is important, therefore, in cases of diminished vitality, as palsy, frosted limbs, and accidents in which a principal nerve is divided, to graduate the temperature of the bath according to circumstances, wrapping the affected part in a damp or wet cloth, if this should be deemed necessary.

1495. *Application of Vapor in Bed.* This is necessary where the patient is very much debilitated. The mode of doing it is as follows. Take two or three heated stones or bricks, and immerse them in cold water until they have done hissing; wrap them separately in a damp cloth of several thicknesses, and place them at the feet and sides of the patient, giving him some stimulating tea, as composition, or cayenne and bayberry, and wetting his face and breast occasionally with cold water, if he is faint. A piece of oil cloth, or a thick blanket, should be placed beneath the lower sheet to keep the bed dry, and clean. The steaming should be continued until a free perspiration ensues, and when the process is completed, the bed clothes and patient's linen should be changed, or the matter that has been thrown out through the pores will be absorbed.

1496. Semicircular hoops are sometimes placed across the patient to prevent the bed clothes from coming in contact with his person, or instead of these, a frame-work may be devised, that will answer a still better purpose. Those who are furnished with a boiler, and a lead or tin pipe, may very conveniently introduce vapor beneath the bed clothes, without the trouble of heating stones. The pipe should be about three quarters of an inch in diameter, and terminated with a tin cup four or five inches square, containing a number of perforations, so that the vapor may issue beneath the bed clothes in a slow and gradual manner.

1497. *Application of Vapor with Blankets.* This is performed by placing the patient in a chair, divested of his clothing, and surrounding him, together with the chair, with one or two clean blankets, sufficiently large to reach the floor. His face should be

uncovered, that he may breathe the fresh air. If he is cold or chilly, his feet should rest on a heated stone, or brick. When these preparations are made, vapor is to be generated by means of a basin or kettle of water, and four or five red hot stones. The water is to be placed under the folds of the blanket, behind the chair, and one of the stones partly immersed in it, supplying its place with another when it ceases to produce a hissing noise, and so on until the process is completed. Some stimulating tea is to be taken in the meantime, as directed in the previous paragraph, and the patient's face and breast wetted with cold water, if he complains of faintness or languor. When he has perspired sufficiently, which will be in fifteen or twenty minutes, a portion of cold water should be dashed over him suddenly with a sponge, or in any other convenient manner, and the blanket drawn around him to exclude the air, until he is well rubbed from head to foot with a coarse towel. He may then dress himself, or be placed in bed, as circumstances require. If the bath is preparatory to a *course of medicine*, the cold water is not applied, as will be noticed hereafter, in the directions for a *course*.

1498. A boiler and pipe, as previously mentioned, (1496) may be used for the introduction of vapor beneath the blanket, instead of the plan just recommended.

1499. *Box to enclose a Joint, or Limb.* This is intended for the local application of vapor to swellings, inflammations, and stiff, or diseased joints. It should be fifteen inches wide, eighteen inches high, and twenty four inches long. The vapor is introduced into the box through a tube near the bottom, and made to pass through a quantity of herbs, or hay. The limb is placed in the box longitudinally, resting it on pads or cushions, if necessary, and a blanket thrown over it to prevent the escape of vapor. In swelling of the labia, or testicles, the patient may sit over the box very conveniently. The time employed in this process, may vary from fifteen minutes to two hours, according to the nature of the case; and if necessary, it may be repeated two or three times a day. During the process, also, benefit is frequently derived by bathing the affected part with volatile liniment, or some other stimulating wash, and rubbing it briskly with the hand. This is particularly useful in stiffness of the joints, and diminished sensibility.

1500. *Box for Vapor Bathing.* This is a wooden box, measuring about two feet in width, two feet and a half in depth, and six or seven feet in height. It furnishes a very convenient and economical mode of vapor bathing, and is extensively used

throughout the United States. A sliding board is fitted into it about eighteen inches from the bottom, which serves the purpose of a seat. The door is placed in front, and contains two circular openings, one above the other, which enables the patient to breathe the external air, either in the erect or sitting posture. A sliding curtain is suspended over each of these openings, which can be moved at pleasure. A board or platform, perforated with half inch auger holes, is fitted loosely into the bottom of the box, having space enough beneath for the introduction of the pipe or tube which conveys the vapor. The interior of the box, but particularly the bottom, should be lined with zinc, to prevent the absorption of the perspirable matter, which is sometimes very offensive. The shower bath, by which the vapor bath is generally concluded, may be administered by pouring water through a piece of perforated zinc, or tin, at the top of the box; or the water may be contained in a small vessel, contrived in such a manner that the patient, by pulling a string, may let down the shower at his pleasure. The perforations should include a circular space of about a foot and a half in diameter. A hole should be made in the bottom of the box to let off the water which collects in it from the administration of the shower.

1501. The *boiler* employed to generate the vapor, is made of tin, sheet iron, or copper, and is sufficiently large to contain a gallon or more of water. It is furnished with a bale, to suspend it over the fire. The top, which is soldered on firmly, contains a hole an inch in diameter, through which water is poured into the boiler by means of a funnel; a small tin or sheet-iron cup, with a narrow brim at the top, should be fitted into this hole to prevent the escape of vapor, during the operation of bathing, without resisting its pressure in case the vessel should be in danger of bursting, as would happen if the water was nearly exhausted. The vapor is conveyed from the boiler to the box through a lead or tin pipe, which is three quarters of an inch in diameter, and furnished with a valve to shut off the vapor if occasion requires. If the pipe is made of tin, it should consist of joints and elbows neatly fitted together, as it is incapable of being bent or twisted in the same manner as a lead pipe.

1502. *Portable boilers* are now manufactured of sheet iron, which are very convenient for practitioners, as well as families. They are made in the form of a cylinder, the upper half being appropriated to the boiler, while the lower half consists of a furnace, in which a fire may be speedily kindled with shavings, or light wood.

1503. *Temperature of the Bath.* This varies from 105 to 120 degrees, according to the feelings or condition of the patient.

If the vapor is too hot, it can be shut off by means of a valve, or in the absence of this, its heat may be diminished by pouring cold water into the boiler. It is not necessary, as a general thing, to employ a thermometer, as it should be an object to render the bath agreeable to the patient, increasing or diminishing its temperature according to his directions. If, however, he should become faint or languid during the operation, his face and breast should be wetted with cold water, as previously directed, or a tumbler-ful of cold water may be dashed over his person. This will immediately revive him, and prove refreshing and grateful. The patient should remain in the bath until a free perspiration ensues, which will generally be in fifteen or twenty minutes; and in the meantime should take one or two draughts of some stimulating tea, as ginger, composition, or cayenne and bayberry, which will serve to keep a determination of blood to the surface of the body.

1504. *Cold Shower.* The vapor bath should always be followed by the cold shower, excepting where the patient is very feeble, or chilly. Whatever may be said in opposition to this practice, it is based upon correct principles, and is productive of beneficial results. The momentary application of the water does not occasion a chill, but quickens the circulation, and causes the blood to flow in an increased quantity into the vessels of the skin, giving it warmth, fulness, and a bright, glowing color. Under these circumstances, the patient is much less liable to take cold, or to be injuriously affected by the atmosphere. The moment the shower is administered, he is refreshed and invigorated. We have seen that the Russians, and people of other nations, leave the vapor bath dripping with perspiration, and roll in the snow, or plunge into a river, previously breaking the ice. The truth is, the application of cold water would often prove injurious, without preceding it by the vapor bath; and we have already quoted the assertion of Dr. Bell, that "the best means of supporting great cold, is to be previously subjected to high heat." (1449.)

1505. Just before the shower strikes the body, the individual should take in a full inspiration, for the water in its descent, forces away the air, and causes him to "catch his breath," as it is termed. The moment he leaves the box, he should be wrapped in a blanket, and rubbed briskly from head to foot for several minutes with a coarse towel. He may then dress himself, or return to bed, according to the state of his health. It is advisable, however, that invalids remain within doors for some hours after the bath, unless the weather is sufficiently mild and pleasant

to admit of exercise in the open air, without the risk of becoming chilled.

1506. The cold shower is never to be employed, unless there is sufficient vitality in the system to favor reaction—that is, a determination of blood to the surface of the body, giving the skin a ruddy, healthful color. Some persons do not become warm in the bath until it has been repeated a number of times, and under these circumstances, the shower would be manifestly improper. The same remark is applicable to the last stages of disease, where life is nearly extinct, and it is impossible to establish a permanent warmth of the skin.

1507. With regard to the quantity of water to be employed, no precise rules can be given. A quart generally suffices, but in some instances a much larger quantity is used. If the patient is of a cold habit, the chill should be taken off; and in some cases it is better to dispense with the shower altogether, sprinkling a slight portion of cold water over him with the hand. I have known the good effects of a *course of medicine* to be entirely counteracted by the careless or injudicious use of the shower bath.

1508. *Medicated Vapor Bath.* This is prepared by allowing the vapor to pass through fragrant herbs, or any medicinal substance. I am not aware, however, that it possesses any superiority over the vapor of pure water; and if it is necessary to bring the system under the influence of medicine, it is better to introduce it at once into the stomach, rather than to depend upon its absorption by the skin, which, in the bath, is somewhat uncertain.

PREPARATION OF TEAS.

1509. Teas should be prepared in a covered vessel, so as to procure them in their full strength. This is particularly necessary in making use of volatile, or aromatic plants. A teapot is very convenient for the purpose I have named, as the tea can be poured out without any admixture of the sediment. I am aware of the prevalent opinion that it is better to swallow "grounds and all," but no advantage can arise from this practice, if the medicine has been steeped a sufficient length of time to obtain its strength; and experience has satisfied me that the tough, woody, or indigestible matter which constitutes the sediment, is sometimes injurious, particularly in dyspeptic affections, and a weak or irritable condition of the stomach. Volatile plants, such as lobelia inflata,

the mints, golden rod, summer savory, and pennyroyal, should never be boiled, or their active properties will be dissipated by the heat.

1510. The terms *infusion* and *decoction* are applied to teas according to the mode in which they are prepared—that is, either by *steeping* or *boiling*. Common table tea is an example of the first, and coffee of the second.

1511. Composition Tea. Take of the powder a moderately heaped tea-spoonful; sugar double the quantity; mix them together, and add a tea-cupful of boiling water. Steep until the tea is cool enough to take. This is the ordinary dose. For further instructions, see the remarks on *composition*, under the head of compounds. (1239, *et seq.*)

1512. Cayenne and Bayberry Tea. Take of cayenne half a tea-spoonful, bayberry double the quantity, and sugar to suit the taste. Add a tea-cupful of boiling water, and steep as directed above. This is more active than the composition, and should be substituted for it in violent or critical cases of disease.

1513. Tea of Spiced Bitters. Take of the powder a level tea-spoonful; sugar double or triple the quantity; mix, and add a tea-cupful of boiling water. Steep a sufficient length of time, and drink the tea. (1246, *et seq.*)

1514. Nervine Tea. Take of scullcap, in powder, two tea-spoonfuls; cayenne the eighth of a tea-spoonful; sugar three or four tea-spoonfuls; boiling water a pint. Steep in a covered vessel until cool enough to use, and if desirable, add the essence of cinnamon to give it a flavor. Keep the tea warm by the fire, and employ it as a drink. It is highly useful in all nervous affections; and while the patient is using it, he should avoid exposure to the cold. If the scullcap cannot be procured, the lady's slipper may substituted. (923 *et seq.*, and 936, *et seq.*)

1515. Stimulating Tea. Take of cayenne, bayberry, and scullcap, each a tea-spoonful; green lobelia half a tea-spoonful; sugar seven or eight tea-spoonfuls; boiling water a quart. Steep these in a covered vessel, and keep the tea warm by the fire. This is highly useful in sudden colds, nervous affections, pains in any part of the body, cramp, colic, asthma, croup, diarrhœa, giddiness, tic douloureux, and hooping cough. I have found it very beneficial between *courses of medicine*, in the treatment of scarlet, typhus, and bilious fevers, as it tends to keep the

skin moist, and of a natural temperature. If the tongue is dry or parched, the quantity of bayberry should be diminished, and that of cayenne increased. A tea-cupful of this tea may be given to an adult every hour or two, or it may be administered in the dose of a table-spoonful, and repeated more frequently. In the meantime it is necessary to avoid exposure to a cold or chilly atmosphere, or the tendency to perspiration will be counteracted. The lobelia is not intended to occasion nausea, and the quantity, therefore, may be increased or diminished according to the peculiarities of the patient. In coughs, and painful affections of the urinary organs, the tea should be rendered somewhat mucilaginous by the addition of slippery elm.

1516. Diuretic Tea. Take of poplar bark a tea-spoonful; juniper berries, bruised, a table-spoonful; cool wort a handful; boiling water a quart. Steep in a covered vessel, and sweeten to suit the taste. This is to be used as a drink, avoiding exposure to a damp or cold atmosphere. It is useful in strangury, gravel, and various difficulties of the urinary organs.

1517. Tea for Diarrhœa, and Dysentery. Take of poplar bark a tea-spoonful, bayberry three tea-spoonfuls, boiling water a pint. Steep, and sweeten to suit the taste. Take a tea-cupful at a dose, adding to it a table-spoonful of rheumatic drops, and repeat every hour until a cure is effected. If the drops are not at hand, half a tea-spoonful of cayenne may be added to each tea-cupful of the tea.

1518. Tea for Impurities of the Blood. Take of cayenne a tea-spoonful and a half; bayberry, poplar bark, and the dust or powder of sumach berries, each a table-spoonful; meadow fern burrs, reduced to a powder, a table-spoonful and a half. Mix thoroughly, and take a tea-spoonful of the powder at a dose, steeping it in a tea-cupful of boiling water, and adding sugar or honey to suit the taste. The dose should be repeated two or three times a day. I have found this to be an excellent medicine in tetter, itch, jaundice, gout, scald head, scurvy, scrofula, cutaneous eruptions, ill conditioned sores, and all impurities of the blood. The quantity of cayenne may be increased, if the patient should consider it necessary.

1519. Tea for Worms. Take of bayberry half a tea-spoonful; balmony two tea-spoonfuls; boiling water a pint. Steep, and sweeten to suit the taste. This may be employed as a drink. It is used for jaundice, as well as worms.

1520. Ginger Tea. Take of ginger a large table-spoonful, and steep it in a pint of boiling water. Sweeten with sugar, molasses, or honey. This is a pleasant and wholesome drink, particularly if milk be added to it, and is serviceable in flatulency, cramp in the stomach or bowels, and a cold or feeble state of the system. (794.)

1521. Slippery Elm Tea. Take of powdered slippery elm and sugar, each a tea-spoonful; boiling water a pint. Infuse until the elm is dissolved.

1522. This tea is sometimes prepared by steeping an ounce of the bark cut into shreds, in a pint of water, as mentioned above; and in this form is free from sediment.

1523. Elm tea is useful in a great variety of affections, as diarrhœa, dysentery, sore throat, and inflammation of the stomach, kidneys, and bladder. It is soothing to the parts with which it comes in contact, and contains a large amount of nourishment. (1164, *et seq.*)

1524. Pennyroyal Tea. Take of pennyroyal a handful; boiling water a pint. Steep in a covered vessel, and sweeten with sugar. This is useful in slight attacks of disease, and as a drink during a *course of medicine*. (1139.)

MISCELLANEOUS REMEDIES.

1525. Cough Jelly. Take half a tea-spoonful of cayenne, a tea-spoonful of powdered elm, and two or three tea-spoonfuls of loaf sugar; rub them together, and add a tea-cupful of hot bayberry tea; stir until a jelly is formed, and flavor with nutmeg, cinnamon, or lemon juice. A tea-spoonful may be taken whenever the cough is troublesome. It is a very convenient form of medicine for children. (1165.)

1526. Alterative Mixture. Take of rheumatic drops and West India molasses, each a table-spoonful; tincture of lobelia half a table-spoonful. Mix. The dose of this is a tea-spoonful, or more, repeated two or three times a day. I have found this medicine very useful in cutaneous diseases, boils, ill-conditioned sores, and mercurial salivation. It is beneficial in dyspepsia also, and generally allays the unpleasant feelings which are experienced in the stomach after eating. The mixture may be given with great advantage to children with the rickets, and various chronic complaints.

1527. Soothing Drops. Take of warm water, sweetened, three tea-spoonfuls; tincture of lobelia, eighteen or twenty drops. A tea-spoonful of this mixture will generally put a restless infant to sleep; but the dose may be repeated, if necessary. The medicine is also useful in a harsh or dry cough.

1528. Compound for Children. Take of composition, spiced bitters, and slippery elm, each a tea-spoonful; cayenne half a tea-spoonful. Mix with molasses, or honey, and administer a tea-spoonful at a dose, repeating it three times a day. This is useful in coughs, loss of appetite, cutaneous diseases, and an impure state of the blood.

1529. Remedy for a Burn. Take of fir balsam a table-spoonful, more or less, and double the quantity of sweet oil. Spread this on a piece of fine linen, and apply it to a burn or scald, where the skin is off. It will generally effect a speedy cure.

1530. Sumach Wine. Make a tea of sumach berries, and sweeten it with sugar, or honey. It has the color of wine, and an astringent, and pleasantly acid taste. It is used in the bowel complaints of children, and as a gargle in sore throat. It is also employed as a wash for ring-worms, tetters, and similar eruptions of the skin. (860.)

1531. Cayenne Simmered in Vinegar. Take of cayenne a tea-spoonful; vinegar a gill. Simmer for four or five minutes. This is employed for bathing sprains, swellings, rheumatic joints, palsied limbs, and parts that have lost their sensibility. It is useful as an external application to the throat, in quinsy; to the side, in pleuritic affections; and to the abdomen, in swelling or tenderness of the bowels. A flannel may be saturated with it, and laid over the affected part, if the disease is severe or obstinate.

1532. Eye Waters. These are prepared in various ways, as will be seen by the subjoined directions. 1. Take of pure cayenne a grain; infuse for twenty-four hours in a wine-glassful of water, and filter. 2. Take of cayenne, lobelia, and bayberry, each half a grain; infuse as before in half a wine-glassful of water, and filter. 3. Take of raspberry, or witch hazel tea, free from sediment, and render it somewhat pungent by the addition of rheumatic drops.

1533. These washes may all be used in affections of the eye, as dimness of vision, inflammation, and a secretion of purulent

matter. In approaching blindness, the first and second are decidedly beneficial, as I can assert from my own experience. They should always be employed milk warm, as cold applications appear to injure the eye.

1534. If the eye contains lime dust, there is no better wash than equal parts of vinegar and water.

POULTICES.

1535. Poultices are external applications intended to soften and relax the skin, allay pain and inflammation, hasten the discharge of matter from tumors or swellings, and cleanse offensive or ill-conditioned sores. Some attention must be paid to the component parts of a poultice, or it will not answer the purpose designed. Astringents, for instance, have a tendency to dry the skin, and thereby retard the process of *suppuration*. (803) In case of inordinate discharges, however, astringents, combined with other articles in a due proportion, are highly useful.

1536. In the country, poultices are usually made of bread and milk, but unless frequently changed, the milk becomes rancid, and irritating. The poultice also dries in a very short time. If milk is used at all, it should be perfectly sweet.

1537. There is probably nothing better for the body of a poultice than powdered slippery elm, as it is not only of a soothing nature, but continues moist a longer time than almost any other substance.

1538. A poultice should be renewed as soon as it becomes dry, which is generally in ten or twelve hours; and if much pain and inflammation are present, it should be wetted occasionally with cold water, which will allay the pain, and gradually subdue the inflammatory action.

1539. Wounds, and raw, or ulcerated surfaces, should be thoroughly cleansed at each renewal of the poultice. This may be done by washing them with mild soapsuds, followed by a tea of bayberry, witch hazel, or pond lily. The two latter are more soothing than the bayberry, and may be employed where the parts are very irritable.

1540. A highly inflamed surface is benefited by sprinkling it slightly with cayenne, finely powdered, previous to the application of a poultice.

1541. When the inflammation of a sore, or wound, is subdued, and the matter all discharged, the poultices are to be discontinued, and the healing salve employed.

1542. Poultices containing lobelia, should not be applied to

raw surfaces, for they generally occasion distressing nausea, and vomiting. A gentleman of Boston informed me, that he once applied a poultice of this description to an ulcer on his breast, which was followed by severe vomiting; and this continued for twenty four hours. He did not even suspect that the poultice was the cause of the difficulty. Where the skin is unbroken, however, as in hard or painful swellings, lobelia may be added with advantage.

1543. Elm and Ginger Poultice. Take of ginger one part; powdered slippery elm two parts. Mix with hot water until of the proper consistence. For boils, carbuncles, felons, whitlows, and all painful swellings, a portion of cayenne should be added, as this will frequently allay the pain and soreness, and give rise to an agreeable sensation of warmth. If the skin is off, the cayenne must be omitted, and even the ginger, under such circumstances, must be dispensed with, or used in a very small quantity. In cases of this description, a simple elm poultice will be sufficient, mixing it with a tea of raspberry, or pennyroyal.

1544. In the absence of slippery elm, pounded cracker or the crumb of bread may be used in making a poultice, and sometimes the elm and cracker are employed in equal parts.

1545. Indian Meal Poultice. Stir Indian meal into boiling water, until it is of the desired consistence. This forms an excellent emollient poultice, and with the addition of cayenne, lobelia, and rheumatic drops, has been the means, in some instances, of dispersing cancers and scrofulous tumors. Several weeks are generally required for this purpose, however, and in the meantime, appropriate remedies must be employed to restore the general health. The poultice may be applied with advantage to gouty feet, stiff, swelled, and painful joints, and to the abdomen, in colic, and some other affections of the bowels. The quantity of lobelia should not be so large that its absorption will be followed by sickness, or vomiting.

1546. Poultice of the Dregs of Rheumatic Drops. Take of the dregs one part, slippery elm two parts. Make into a poultice with hot water. This is a useful application to indolent or offensive sores, and parts that are approaching a state of mortification. Cayenne, or ginger may be added, if desirable. It should not be applied to boils, tumors, or swellings in which the formation of matter has commenced; for it draws the skin into wrinkles, and greatly retards the suppurative process.

1547. Carrot Poultice. Boil the carrots until they are sufficiently soft to form a poultice, and deprive them of their skins. This is of a soothing nature, and useful in irritable, or badly-conditioned sores. If carrots cannot be obtained, potatoes, or turnips, boiled and mashed into a pulp, may be substituted.

1548. Yeast Poultice. Take of wheat flour a pound, and add half a pint of yeast. Expose the mixture to a gentle heat until it begins to rise. This form of poultice, says the United States Dispensatory, is gently stimulant, and is sometimes applied with much benefit to foul and gangrenous ulcers, the fetor of which it corrects, while it is supposed to hasten the separation of the slough or dead part.

1549. Charcoal Poultice. Take wood charcoal red hot from the fire, and as soon as it ceases to burn, reduce it to a very fine powder; mix this with a poultice of slippery elm, or Indian meal. Charcoal, recently prepared, says Dr. Wood, has the property of absorbing and neutralizing those principles upon which the offensive odor of putrefying animal substances depends. The poultice, therefore, is highly beneficial in correcting the fetor of wounds and sores that are in an offensive or gangrenous state. It should be frequently renewed.

INJECTIONS OR ENEMAS.

1550. These are liquid preparations which are thrown into the rectum with a syringe. They are of great importance in the management of disease, and if properly prepared, will often effect a cure without any other treatment. I have known a single injection to arrest a violent fever, where it depended upon irritating matters in the bowels.

1551. Professor Dewees remarks, "The value of enemas is only beginning to be appreciated in this country. They have had to contend against much prejudice to gain their present consideration. An injurious and fastidious delicacy has prevented their general employment, especially out of our cities; and it is only within a few years even in our cities, that they have been looked upon as prompt and efficient remedial applications. For the good of the afflicted, we hope this prejudice will soon wear away; and that they will be looked upon as indispensable medical, as well as domestic remedies."*

* Practice of Physic.

1552. Professor Dunglison says, "Injections are invaluable agents, where the powers of life are so much reduced, that a rational fear is entertained as regards the administration of cathartics by the mouth."*

1553. Dr. Thomson, who has done much to render the use of injections popular in the United States, says they had better be used ten times unnecessarily, than to be omitted once where they are absolutely required.

1554. Nutritious injections have been the means of sustaining life for a considerable time, where the individual was unable to swallow. Dr. Currie, in his work on Cold Water, relates a case in which the patient lived sixty days. The injections in such cases should consist of beef tea, or some other equally nutritious fluid.

1555. Life is sometimes saved by the use of injections, when it is impossible to administer medicine by the mouth. An interesting case of this kind was detailed to me by Dr. Watkins of Dover, N. H. A man applied to him with ulcerated throat, who had not been able to swallow or speak for two days. An injection composed of cayenne and bayberry tea, with half a tea-spoonful of green lobelia, was administered, which had no effect. This was followed by a second and more powerful one, which occasioned nausea. In fifteen minutes, a third was given which produced relaxation, and the patient vomited a considerable quantity of greenish matter, together with pure yellow bile. He continued to vomit at intervals for three or four hours, perspiring freely, but without being able to swallow. His neck, meanwhile, was bathed repeatedly with strong rheumatic drops. At length he fell asleep, and on awaking, which was not until the lapse of five or six hours, had the use of his voice. He was thirsty, and drank freely of ginger tea, and milk porridge, from which time he speedily recovered.

1556. Several cases of putrid sore throat have come under my observation, where the patients were unable to swallow, but by administering one or two injections containing a tea-spoonful or more of green lobelia, the difficulty has been speedily removed.

1557. Those who are opposed to depletion in all its forms, employ injections to evacuate the bowels instead of cathartics; and that they are entirely adequate to this purpose, I do

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* General Therapeutics, p. 251

not entertain a doubt. The innutritious part of the food, which is destined to be discharged from the body by stool, passes through the small intestines in a comparatively fluid state, and is emptied into the lower or large intestines, where it acquires a more solid consistence, having been deprived of the greater part of its moisture by the intestinal absorbents. (958.) The large intestines, as I have said, are about six feet in length, (72) and consist of three portions, denominated *cæcum*, *colon*, and *rectum*. (77, *et seq.*) The cæcum is a kind of sac, about three inches long, in which the small intestines terminate with a valve. The colon forms the principal portion of the large intestines, ascending on the right side toward the liver, passing across the abdomen under the stomach, and descending on the left side, where it forms a convolution similar to the Roman letter S, called by anatomists the *sigmoid flexure*. (See Fig. 3, page 20.) Here the rectum commences, and descends to the anus or fundament, where it terminates. It will be seen, therefore, that an injection does not pass beyond the valve of the cæcum, nor does it usually reach higher than the *sigmoid flexure*. This, however, is sufficient to evacuate the bowels, for it has been ascertained that the matter to be voided by stool, accumulates in the sigmoid flexure, which is always within the reach of injections. The colon, excepting in rare cases, is not the seat of the accumulation; and even if it should be distended with alvine matter, from long continued costiveness, injections would produce the desired effect, for the forcible contractions which they excite in the lower part of the intestinal tube, gradually extend to more remote parts, and the colon becomes at length completely evacuated.

1558. Injections are not only useful in emptying the bowels, but also make a prompt and decided impression upon the general system. They should be employed, therefore, in all dangerous or obstinate cases; and should never be dispensed with in apoplexy, hemorrhage, convulsions, inflammation of the brain, and low forms of disease. In affections of the bowels, as dysentery, colic, piles, tenesmus, and worms, they afford prompt relief. In suspended animation, also, they are of great importance in rousing the dormant energies of life. I have known dogs to be immersed in water until they were apparently dead, and then revived by the administration of injections composed of an infusion of cayenne and bayberry, with a portion of the antispasmodic tincture.

1559. If the stomach is too irritable for the retention of medicine, it may be quieted in most instances by the use of injections,

together with the vapor bath, which have the effect to restore a balance to the circulation.

1560. Injections into the rectum exercise a powerful influence on the neighboring parts and organs, and hence they are of great value in stoppage of the urine, suppression of the menstrual evacuations, and inflammation of the womb, bladder, kidneys, or bowels.

1561. Lobelia added to an injection, in the quantity of a tea-spoonful of the powdered leaves, or seeds, or a table-spoonful of the tincture, and repeated once or twice, will excite vomiting, but is usually followed by more or less prostration. On this account it is rarely given in this form with a view to its emetic operation, excepting where it would be obviously useful, as in dislocations, fractures, severe forms of croup, locked jaw, strangulated hernia, deep seated pains, violent inflammatory affections, and those cases in which it is desirable to produce general relaxation of the system.

1562. Worms in the rectum are effectually dislodged by the use of stimulating injections.

1563. In diseases accompanied with great debility, tonic injections are sometimes employed with advantage. They may consist of a tea of poplar bark, balmony, golden seal, or any other approved tonic.

1564. Instances occur in which, from a stricture or closing of the rectum, it is impossible to administer an injection. A difficulty may also arise from the presence of an abscess in the rectum. A case of this kind occurred in Philadelphia, in which injections caused a violent determination of blood to the head, followed by a loss of consciousness. Ultimately, however, the abscess discharged its contents, and the patient recovered.

1565. *Syringes.* These have been greatly improved of late years, and admirably adapted to the purpose for which they are intended. They vary in size from one to sixteen ounces. Those intended for adults are usually accompanied with a straight, and crooked pipe, the latter of which enables an individual to use the syringe without an assistant.

1566. *Quantity of Fluid for an Injection.* This is regulated in some measure by circumstances, but chiefly by the age of the patient. For an infant a year old, an ounce will be sufficient; for a child five years old, two ounces; for a youth twelve years old, three ounces; for an adult, from four to sixteen ounces. Two table-spoonfuls, I will remark, are about equal to an ounce. Many practitioners use a pint of fluid for an adult, but half that

quantity will generally answer a better purpose, for it is longer retained, and procures a more thorough evacuation. Where a pint is injected, it is speedily discharged, and produces little or no effect. Instances occur, however, in which a pint, or even more, may be employed with advantage.

1567. *Common Injection.* Take of bayberry a tea-spoonful; cayenne, green lobelia, and scullcap, or lady's slipper, each half a tea-spoonful; boiling water half a pint. Steep in a covered vessel, and strain, or pour off the liquid. Administer blood warm, previously smearing the pipe of the syringe, and the external sensitive parts, with lard, tallow, or sweet oil. After the liquid is drawn into the syringe, the piston should be pushed gently forward until a few drops of it escape, as this will serve to expel any air which may be contained in the syringe, and which it would be improper to introduce into the bowels.

1568. In giving an injection, the sediment should be omitted, at least as a general rule, for it is liable to choke the syringe, and in dysentery, piles, and other affections of the lower bowels, it not only increases the irritation already existing, but frequently gives rise to severe pain and distress. (1252.)

1569. It is proper to retain the injection as long as possible; and if the muscles of the anus are in a relaxed condition, as occasionally happens, a folded cloth or towel may be applied to prevent its immediate escape.

1570. Where the bowels are very sore, or irritable, half a tea-spoonful of slippery elm, or a tea-spoonful of honey, should be stirred into the injection, either of which will have a soothing and beneficial effect. In case of acid in the bowels, great advantage will be derived by the addition of a tea-spoonful of the *bicarbonate of soda.* (1028, *et seq.*)

1571. In severe or violent attacks of disease, the quantity of cayenne and lobelia may be increased, or a table-spoonful of rheumatic drops may be added, when the injection is sufficiently cool to administer.

1572. *Simple Injections.* Where there is no other object in view than that of merely evacuating the bowels, the injection may consist of an infusion of catnip, pennyroyal, fleabane, ginger, black pepper, summer savory, or any of the stimulating herbs. Composition tea, or warm water containing a table-spoonful of rheumatic drops, makes an excellent injection.

1573. *Injection for Diarrhœa, or Dysentery.* Take of bayberry and cayenne, each a tea-spoonful; slippery elm, and scull-

cap, or lady's slipper, each half a tea-spoonful; boiling water half a pint. Steep until the liquid is nearly cool enough for use; strain, and add two or three tea-spoonfuls of rheumatic drops, or an equal quantity of the tincture of myrrh, the latter of which is preferable. In dysentery, the cayenne is a valuable article, and should be freely employed.

1574. *Injection for Immediate Use.* Take of warm water half a pint; antispasmodic tincture one or two table-spoonfuls. Mix. This is beneficial in apoplexy, convulsions, hydrophobia, locked jaw, hysteria, and sudden attacks of colic.

1575. *Injection for Piles.* If the parts are very sore or irritable, the injection may consist of an infusion of raspberry, witch hazel, or sumach leaves, rendered somewhat mucilaginous with slippery elm; and as soon as it can be borne, ginger, cayenne, or rheumatic drops may be added. The liquid should always be strained, or the sediment will occasion pain, and tenesmus, and not unfrequently aggravate the disorder.

1576. *Soothing Injection.* Take of scullcap a tea-spoonful; slippery elm half a tea-spoonful; raspberry tea, boiling hot, two tea-cupfuls. Steep until nearly cool enough to administer, and strain. If the usual injection is followed by lingering pain, or uneasiness, this will speedily allay it, and produce a tranquil sensation throughout the whole system. It is beneficial in piles, recovery from dysentery, and all cases in which there is soreness or irritability of the lower bowels.

INJECTIONS FOR FEMALES.

1577. These are prepared in various ways, and introduced into the vagina by means of a female syringe. They are useful in fluor albus, inflammation of the womb, falling of the womb, menstrual irregularities, and retention of the placenta or after-birth, accompanied with acrid or offensive discharges. The manner of preparing them, will be described hereafter, in speaking of the diseases in which they are applicable.

1578. The syringe most commonly used is five or six inches long, and three quarters of an inch in diameter. The end is rounded, and perforated with holes. Dr. Chase's *vaginal syringe*, however, is much more convenient and useful than this, being furnished with a shield which closes the vagina at its orifice, and prevents the fluid composing the injection from making a rapid escape.

GIVING AN EMETIC.

1579. It is necessary, oftentimes, to cleanse the stomach with an emetic, where it is not convenient to administer a *course of medicine*. For this purpose, the patient may either be in bed, with a heated stone wrapped in a damp cloth at his feet, or seated by the fire, if the season requires it, covered with a blanket. A tea of composition, or of cayenne and bayberry, is to be given in tea-cupful doses, until he begins to perspire. A tea-spoonful of green lobelia is then to be mixed with another portion of the tea, and administered at one draught, repeating it every twenty or twenty five minutes, until the stomach is effectually cleansed. Two or three doses will generally suffice. If the perspiration dies away before the lobelia has done operating, an additional quantity of cayenne must be administered. As soon as vomiting commences, milk porridge should be given freely, (1420) alternating it occasionally with a tea of pennyroyal, ginger, catnip, or golden rod.

1580. If the patient is seated by the fire, and does not perspire readily, he should immerse his feet in a bucket of warm water, or rest them on a heated stone, the latter of which is preferable, as the feet are liable to be chilled by removing them from the water. If the emetic occasions protracted nausea, without vomiting, a moderately heaped tea-spoonful of the *bicarbonate of soda* (1028) should be given in two-thirds of a tea-cupful of warm water, or an equal quantity of the tea already mentioned.

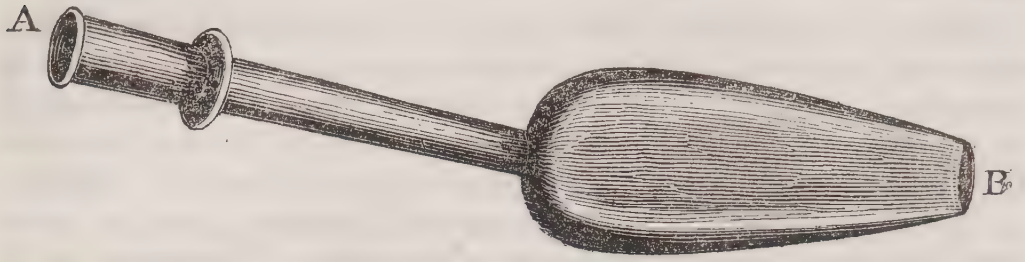
1581. Boneset, or blue vervain, will answer very well to cleanse the stomach, where lobelia cannot be obtained. (705, *et seq.* and 711, *et seq.*)

1582. A change of linen and bed-clothes is important, after the operation of an emetic, particularly if the patient has perspired freely.

TREATMENT OF CHILDREN.

1583. If children are refractory, and unwilling to take medicine, we should do what we can to render it palateable. The various teas should be administered without the sediment, and their unpleasant taste concealed by the addition of sugar, and some innocent spice, or essence. If very young, there is little or no difficulty in giving them medicine, but this is not the case when they acquire sufficient strength to make forcible resistance. In instances of this kind, advantage will be derived from the use

of a newly invented spoon which is represented in the subjoined cut. It is hollow throughout, and has an orifice at each end,



marked A and B. In order to fill the spoon, the finger is first placed upon B, and the liquid, whatever it may be, poured into the orifice at A; the forefinger of the right hand is then placed upon A, and the first finger removed. By retaining the finger upon A, the liquid will not escape, and when the spoon is fairly within the mouth of the child, the finger should be suddenly raised and replaced, so that only a portion of the liquid may escape at a time. The first portion swallowed, the finger may be raised a second time, and so on till the medicine is all administered. It is important that the finger should not be removed until the child is observed to take in a breath, as the liquid will then pass down its throat without difficulty.

1584. In giving an emetic to a child, we should steep a tea-spoonful of green lobelia in half a tea-cupful of hot raspberry or bayberry tea, and administer a table-spoonful of the liquid, more or less, at a dose, according to its age, repeating it every ten or fifteen minutes, until it operates. The child in the meantime should be kept in a perspiration, and the action of the emetic assisted by some pleasant drink, as an infusion of black birch, ginger, or pennyroyal. Milk porridge should also be given. If the child is five or six years old, two-thirds of a tea-spoonful of lobelia will be sufficient, increasing or diminishing the quantity according to its age.

1585. It is very convenient, in some instances, to give the lobelia by injection, a practice which I have sometimes adopted to my entire satisfaction. Administered in this form, the quantity requires to be slightly increased. It should be given in some bland fluid, as milk and water, or raspberry tea, so that it may be retained as long as possible. If discharged immediately, it produces little or no effect, and renders it necessary to repeat the injection.

1586. In administering the vapor bath, the child may be tied in a small arm chair, and surrounded with a blanket, as directed for an adult, (1497) leaving its head uncovered, that it may breathe

the fresh air. Care must be taken that the vapor is not too hot. In the meantime, a tea of raspberry, ginger, composition, or pennyroyal, should be given to aid in promoting perspiration. If the child appears faint, or languid, its face and breast should be wiped with a cloth or towel wrung out of cold water, or vinegar; and if there is any manifestation of thirst, special care should be taken to supply it with drink. This may consist of the teas already named, or a mouthful or two of cold water, though the latter should be used sparingly, as it tends to chill the stomach.

1587. The bath may be administered to a very young child, by placing it on a mattress, covering it loosely with a blanket, and generating vapor by means of a heated stone, wrapped in a wet cloth of several thicknesses.

1588. When the bath is completed, the child may be sponged with cold water, and rubbed with a cloth or fine towel until its skin is in a glow, managing it as we would an adult.

COURSE OF MEDICINE.

1589. In all cases where there is no probability of effecting a cure by simple treatment, we should administer a *course of medicine*. This consists in the use of injections to evacuate the bowels, astringents to cleanse the mucous membrane of the alimentary canal, (807) stimulants and the vapor bath to promote perspiration, and an emetic of lobelia to free the stomach from its morbid or vitiated contents. This is the "*one remedy for all diseases*" which the diplomatised physicians have condemned as being unphilosophical and absurd. I do not hesitate to say, however, from what I have seen of the routine practice in our public institutions, that a *course of medicine* will do more, in a *few hours*, toward the removal of disease, than is often accomplished by the old school physicians in *weeks*, or even *months*. It tends directly to equalize the circulation, remove obstructions, invigorate the skin, promote appetite and digestion, and restore every organ and part of the body to a natural and healthy condition. If these results are produced, it matters not what may be the peculiar type of the disease, for nothing further can be done toward the perfection of a cure.

1590. A *course of medicine* does not consist in the administration of a *single remedy*, as many people have been led to suppose, but in a series of remedies, which are admirably adapted to the removal of disease; and unlike the *poisons* employed by the medical faculty, they act in harmony with the laws of the human system, and do not increase the existing malady. I may

assert, without the fear of contradiction, that there is not a single prominent agent in the old school materia medica, which does not produce a disease or irritation peculiar to itself. Blisters, for example, excite inflammation; the lancet occasions dyspepsia, nervousness, and a great variety of disorders; digitalis and nitre weaken the action of the heart, and rapidly diminish the pulse; opium produces costiveness, and impairs the functions of the brain and nervous system; and calomel, that fearful scourge of the human family, destroys the bones, ulcerates the gums, causes the teeth to drop from their sockets, and diffuses its poison throughout every part of the animal machine. Is it reasonable to suppose, therefore, that substances which are capable of producing disease, can be of any service in its eradication, excepting on the principle of substituting one malady for another? It is true, we may allay a severe pain by the use of a stupifying narcotic, but this does not remove the *cause* of the complaint. Pleurisy may be relieved in some instances by copious blood-letting, but it is at the expense of the patient's constitution, and perhaps his life. The inflammation of an internal organ may be transferred to the skin by the external application of a blister, but the danger of this mode of practice is apparent to every reflecting mind, and has already been discarded by some of the most distinguished members of the medical faculty themselves.

1591. The charge which is so unceasingly made against the advocates of the reformed practice, that they use only *one remedy*, meaning thereby a *course of medicine*, is much more applicable to the diplomatised physicians with whom it originated; for it is well known that they profess to cure every form of disease with the lancet, and a few poisons. It is remarked of Dr. Dudley, one of the professors in Transylvania University, that "calomel, tartar emetic, opium, ipecac, and a few vegetable cathartics, constitute almost his entire materia medica."* Dr. Jackson, formerly a professor in Harvard University, said to the students in the Massachusetts General Hospital, "Give me mercury, antimony, opium, and bark, and I care not for any thing else." Now if these medical worthies are not to be censured for confining themselves to a few pernicious or poisonous drugs, why should the reformers in medicine be condemned for employing a combination of innocent vegetable remedies, in what is termed a *course of medicine*? Admitting, however, for the sake of argument, that we use only *one remedy* in all complaints, I am not aware that this would be any objection to the practice, provided we succeed in curing our patients. There is surely but little merit in prescribing a

* Boston Medical and Surgical Journal for 1839.

great variety of drugs, when it is known that their only effect is to generate disease, and injure or destroy the constitutional powers.

1592. A *course of medicine* effectually cleanses the stomach, which is a very important matter, and one which the routine physicians generally neglect. For example, a patient applied to me a few months ago, who had been under a medical man for nearly a year without receiving any benefit, and during that time no measures had been taken to restore his stomach to a healthy tone. I gave him a course of medicine without delay, which caused him to vomit a large amount of ropy and very offensive matter. From that moment he felt relieved, and in a short time was restored to perfect health. I have met with many cases of prolonged disease, in which a cure was effected by the administration of a few lobelia emetics to cleanse the stomach. Indeed, this organ, as I have previously said, may be regarded as the fountain of life; and it is only through its agency that we can hope to remove disease, or repair any injury which the system has sustained. It has the control of every other organ in the body, and disease becomes obstinate or severe in proportion as it loses its power of vital resistance.

1593. The *perspiration* which ensues from the administration of a course of medicine, is highly beneficial, and affords more or less relief in every form of disease. It is well known that fevers of every description subside as soon as the patient begins to perspire. Dr. Cullen remarks, that "the flowing of the sweat relieves the difficulty of breathing which occurs during the cold stage of an intermittent;" he also says, that "the headach, and the pains of the back and joints, which usually accompany this affection, gradually go off with the sweating stage."

1594. Sweating, to be of any service in the treatment of disease, must be produced by healthy, invigorating stimulants, together with the vapor bath, and other appropriate remedies. If it is caused by "hot rooms, and close beds," as Dr. Denman remarks, or by cordials and drinks composed of wine, brandy, or any alcoholic, or narcotic stimulant, it will be more injurious than beneficial.

1595. The *sweating sickness* of Great Britain, which occurred epidemically about three centuries and a half ago, generally proved fatal, unless perspiration ensued. This disease, says Dr. Good, was a malignant fever, and "ran its course in a single paroxysm; the cold and hot fits were equally fatal; but if the patient reached the *sweating fit*, he commonly escaped." At Shrewsbury, con-

tinues Dr. Good, the disease raged for seven months, and carried off a thousand victims. After discovering the benefit of the *sweating plan*, however, it was *far less fatal.*

TREATMENT PREVIOUS TO A COURSE.

1596. Acute Diseases. In these, where it is considered necessary to administer a course of medicine, it is usually given without much preparatory treatment, excepting a free use of cayenne and bayberry tea. The emetic should be administered as soon as the system is prepared for its operation—that is, as soon as the patient begins to perspire, for nothing will afford him more speedy relief than the thorough evacuation of the stomach.

1597. Chronic Diseases. In these, particularly if the patient is of a cold habit, or has been long under the influence of depletive, or poisonous drugs, the tonic and stimulating medicines should be used for several days, or perhaps a week, previous to the administration of a course. A dose of spiced bitters may be taken before each meal, if the appetite is much impaired; and during the day, an occasional dose of composition should be used to warm and invigorate the system. The patient, in the meantime, should not be exposed to a cold or damp atmosphere. At bed time, a dose of composition, or of cayenne and bayberry, is to be taken, and if the extremities are cold, or the circulation feeble, a heated stone, or bottle of hot water, wrapped in a damp cloth, placed at the feet. At bed time, also, an injection will be of service, and this should never be omitted, if the bowels are costive. The *lobelia pills*, in connexion with the other remedies, are always useful, and in some cases, particularly beneficial. (1299, *et seq.*) If the patient is chilly, or possesses but little animal heat, the vapor bath should be administered once a day, or once every other day, followed by an application of the *stimulating liniment* to the entire surface of the body. (1307.) The most suitable time for employing the bath is at bed time.

1598. There are some practitioners who administer a course of medicine in chronic diseases without any preparation of the system, but it is adviseable to use the warming medicine twenty-four hours previously, even in the mildest cases. Without this precaution, the course does not operate so efficiently, and in some instances, it may occasion the patient considerable distress.

1599. The most suitable time for the administration of a course is in the morning, an hour or two after breakfast. The

patient should take a light meal, consisting of gruel, or some liquid nourishment, in preference to solid food, as the latter would not be fully digested before the operation of the emetic, and in that case, the energies of the stomach would have been expended to no purpose. The administration of a course in the afternoon, when the patient is fatigued, or languid, is not attended with the same good results.

1600. Fears are sometimes entertained that a patient is too much debilitated to admit of vomiting, but I have administered lobelia emetics in the last stages of disease, with no other hope than that of affording mere temporary relief; and vomiting, I have observed, has been performed with perfect ease, accompanied, in many instances, with an increase of strength. I do not wish to inculcate the doctrine, that emetics are to be given indiscriminately to weak patients, but I do not conceive that debility alone is a prominent objection, where it is necessary to evacuate the stomach of its vitiated contents. Professor Ware remarks, that emetics may be given toward the close of a fever, and says they are not prostrating, as is supposed, but increase rather than diminish the strength. We have already quoted Dr. Good, as saying that "there are few persons so debilitated as not to bear vomiting." (631.)

1601. Cases occur now and then, in which it is necessary to pay particular attention to the treatment preparatory to a course. I will mention one or two examples.

1602. Mrs. P—— of Frankford, near Philadelphia, a wealthy and influential lady, had been indisposed for seventeen years, and for nine years of that time, had been almost constantly under treatment by Drs. Betton and Lambe. They had cupped her seventy times, bled her as often, salivated her eleven times, and repeatedly shaved and blistered her head. I have these statements from her own mouth, and can vouch for their truth. Among the diseases with which she was afflicted, according to the testimony of her physicians, were rheumatism, dyspepsia, tic douloureux, liver complaint, nervous fever, affection of the kidneys, affection of the spine, disease of the brain, disease of the heart, and last, though not least, bilious remitting nervous typhoid fever, with inflammation of the sciatic nerve. This last complication baffled the skill of her medical advisers, and they said she could not long survive. Dr. Taylor was called in, who occupied a day or two in consulting medical authors, and finding no similar case on record, expressed the belief that there was no hope for the patient. Her husband, Mr. P——, advised her to take courses of medicine,

but she refused. Ultimately, however, she was induced to try the experiment, and sent for Dr. Comfort of Philadelphia, as her physician. He found her in a dangerous situation, and though the weather was exceedingly warm, and she was wrapped in blankets, she complained of chilliness. The vapor bath could not be used, because it produced a violent determination of blood to the head, and the same effect was caused by immersion of the feet in warm water. Heated stones, wrapped in damp cloths, were placed about her person, in bed, and composition tea administered freely, together with injections, which were repeated four or five times a day. This treatment was continued for a week, when she began to perspire, and after that period, there was no trouble in employing the vapor bath. Several courses of medicine were administered, at proper intervals, and in the lapse of six weeks, according to Mrs. P——'s own statement, she was in the enjoyment of perfect health, after having been under tolerably active treatment for *nine years*, and given up as incurable by her physicians.

1603. Mrs. L—— of Boston, was troubled with an affection of the heart, and had been under the care of a medical man for nearly two years, who considered her case as beyond the reach of remedies. Her extremities were cold, and she was constantly annoyed by a feeling of chilliness, even though seated by a warm fire. Upon the slightest exertion her heart palpitated violently, and the blood would rush suddenly to her head. A friend advised her to take some *composition tea*, but this increased the palpitation, giving rise to faintness, and other distressing symptoms. My advice was solicited in the case, and finding the blood-vessels of the skin very much obstructed, I advised her to undergo a perspiration in bed, which was accomplished by placing heated stones wrapped in damp cloths at her feet and sides, and giving her composition tea, which contained about half a tea-spoonful of green lobelia to the pint. By this treatment the circulation became equalized, and the patient ceased to complain either of palpitation, or a determination of blood to the head. She continued to take the composition for several days, together with an injection night and morning, after which a course of medicine was administered, and with one or two repetitions of it, was entirely cured of her malady.

DIRECTIONS FOR A COURSE.

1604. Take of powdered bayberry five moderately heaped tea-spoonfuls; scullcap, or lady's slipper two tea-spoonfuls; cayenne two or three tea-spoonfuls; boiling water a quart. Steep in

a covered vessel, and set it by the fire to keep warm. If *coarse bayberry* is used instead of the *powdered*, two large table-spoonfuls will be required. The scullcap, I will remark, is superior as a nervine to the lady's slipper, and more agreeable to the taste. The latter is nauseous to the majority of people, and on that account is frequently dispensed with in a course of medicine, where it is important that a nervine should be used. In diseases accompanied with nervous symptoms, the scullcap, or lady's slipper should always be employed, even though it be omitted under other circumstances.

1605. The course is to be commenced by giving the patient a tea-cupful* of the above tea, sweetened to suit the taste. This is to be followed by an injection, prepared by steeping two thirds of a tea-spoonful of green lobelia in a tea-cupful and a half of the tea, while it is hot, straining, or separating it from the sediment when nearly cool enough to administer, and adding one or two tea-spoonfuls of rheumatic drops. (See paragraphs 1567, –8–9–70.) If it is necessary to make a powerful impression on the system, the quantity of lobelia may be increased, steeping with it half a tea-spoonful of cayenne, and using a table-spoonful or more of the drops, instead of the quantity specified. In diarrhœa, or dysentery, a table-spoonful of the tincture of myrrh should be added instead of the drops, though the latter will answer a very good purpose. (1573.) A repetition of the injection is often beneficial, as in costiveness, pain in the bowels, headach, apoplexy, or any excessive determination of blood to the head. If uneasiness, or lingering pain follow an injection, the difficulty may be obviated by administering one composed of slippery elm tea, or a tea of raspberry, scullcap, and elm. (1576.)

1606. As soon as the injection has done operating, the vapor bath is to be administered in some convenient manner, having previously made arrangements for that purpose. (See paragraphs 1495, *et seq.*, 1497, *et seq.*, and 1500, *et seq.*) The temperature of the bath, as we have already stated, is to be regulated according to the feelings or condition of the patient; and if he becomes faint or languid, his face and breast should be wetted with cold water, or a tumbler-ful of cold water dashed over his person. (1503.) As soon as the bath is commenced, he should have a second tea-cupful of the tea, (1605) and if he is chilly, or does not

* According to the measure adopted in this work, *seven* tea-cupfuls are equal to a quart. See paragraph 605. This hint is requisite, as tea-cups vary greatly in size.

perspire freely, it may be repeated in five or ten minutes. If requisite, half a tea-spoonful or more of cayenne may be added to each cup of the tea. I have observed that where the system has been well warmed by cayenne, the lobelia operates more efficiently, and produces a more beneficial result.

1607. A free use of the tea in question, produces a twofold advantage. The bayberry, which is one of its ingredients, cleanses the inner coat of the stomach of its morbid secretions, (807, 822) which is a very important object; while the cayenne, in addition to its general effects upon the system as a pure, healthy stimulant, acts locally upon the glands of the stomach, and dislodges from them large quantities of cold, or slimy mucus. By using these two agents, therefore, previous to the administration of the emetic, the stomach is cleansed in the most thorough and effectual manner.

1608. After the patient has remained in the bath until a free perspiration ensues, which will generally be in fifteen or twenty minutes, he may wipe himself dry, replace his shirt before leaving the bath, and go directly to bed, having a blanket thrown around him to prevent the possibility of his becoming chilled. If he is of a cold habit, or the season renders it necessary, the bed should be previously warmed. A heated stone, or bottle of hot water,* wrapped in several thicknesses of a damp cloth, and that enclosed in a dry flannel, should always be in readiness to place at his feet, unless the weather is so warm that there will be no difficulty in maintaining a perspiration by the use of the medicines alone.

1609. The bedclothes must be regulated according to the season, using a sufficient quantity to make the patient comfortable, and keep him in a gentle perspiration. He is sometimes oppressed by an undue quantity, and his breathing rendered difficult, or laborious. This extreme should always be avoided by those who have charge of the sick.

1610. *The Emetic.* The first dose of this should be prepared while the patient is in the vapor bath, so that it may be administered the moment he is in bed. If the perspiration is suffered to die away before it is given, it will operate much less favorably. Hence it is sometimes administered to cold and feeble patients just before they leave the bath, having the bed previously warmed for their reception.

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* A jug containing about two quarts of water, will retain the heat a much longer time than a stone, but will not generate so much vapor; the latter, therefore, is preferable. A jug, however, is very convenient to place at the feet on going to bed, as it will retain a portion of its heat until morning. A stone jug is preferable to one of earthen ware.

1611. The emetic is prepared by adding a moderately heaped tea-spoonful of green lobelia to a tea-cupful of the cayenne, bayberry and nervine tea, (1604) sweetening it to suit the taste. This is to be taken in substance, at one dose. By moistening the lobelia with equal parts of rheumatic drops and water, before adding it to the tea, it will mix more thoroughly, and not adhere to the mouth and throat.

1612. In giving a light course of medicine, which is necessary in cases of great debility, the lobelia should be administered without the sediment, as it is then more gentle in its effects, and less liable to be followed by tedious or distressing nausea. It may be prepared as follows. Take of green lobelia five tea-spoonfuls; boiling water a tea-cupful and a half; steep fifteen or twenty minutes in a covered vessel, and strain. The infusion may be divided into three portions, and given in the same manner as the powder.

1613. It should be remembered that the *brown lobelia* is more strong and active than the *green*, (695) and consequently should be used in a diminished quantity. Two thirds of a tea-spoonful of the former, is about equal to a tea-spoonful of the latter. For my own part, I prefer the green, particularly in the treatment of children, and feeble or delicate patients. Brown lobelia is more apt to be harsh in its effects, and to occasion prostration. Many practitioners, nevertheless, use it altogether, and consider it preferable to the green; while others employ equal parts of the green and brown in combination. The latter is undoubtedly preferable where it is necessary to make a prompt and decided impression on the system, as in apoplexy, delirium tremens, locked jaw, or any violent febrile, or inflammatory affection.

1614. *Repetition of the Emetic.* It is a common practice to administer the second dose of the emetic in fifteen minutes after the first, but unless there is some urgent necessity, I prefer waiting at least half an hour, in order that the medicine may diffuse itself through the system. The second dose may then be administered, prepared in the same manner as the first; (1611) and in fifteen minutes, if vomiting has not ensued, or is not likely to be effectual, a *third dose* may be given. Three doses is the usual number; but sometimes one is sufficient, and at others six or seven are required. There are many curious extremes in this respect. I know a lady who never requires more than half a tea-spoonful of green lobelia to operate as an emetic; while, on the other hand, I recently met with a case in which nine large tea-spoonfuls of brown lobelia were given before vomiting ensued. A similar instance occurred a year or two ago in Nashua, N. H. The patient was afflicted with dyspepsia, and had been dosing with

Brandreth's pills, but finding no relief, concluded to take a course of medicine. He commenced at seven o'clock in the morning, and by noon had swallowed eleven tea-spoonfuls of brown lobelia, without vomiting, or even experiencing nausea, excepting in a slight degree. At nine o'clock in the evening, the vapor bath was administered, after which he dressed himself, and took his seat by the fire. In about three quarters of an hour, vomiting commenced, and he discharged a large quantity of greenish and offensive matter. His stomach soon became quiet, however, and he ate a hearty supper. He slept soundly during the night; and the next morning arose at an early hour, prepared for his daily labor in the factory, in which he was employed. From that time the dyspepsia left him, and he enjoyed uninterrupted health.

1615. Where the patient is properly managed, it is not necessary, as a general thing, to administer a large quantity of lobelia. If the stomach is cold and inactive, as often happens in chronic diseases, the warming medicines should be employed several days previous to the course. In the present improved state of the vegetable practice, it rarely happens that three doses of lobelia are not sufficient to evacuate the stomach effectually.

1616. The emetic is given in three portions, that it may have a more thorough operation. The first dose is frequently followed by vomiting, while the second may leave the stomach quiet, and vomiting not ensue again until the third is given; or the first and second doses may both vomit, and yet, if the stomach is very foul, a third be required; or one dose may operate sufficiently, producing prostration, frequent vomiting, and a tingling sensation throughout the whole system; or all three of the doses may be taken before vomiting occurs; and in that event, the operation is liable to be tedious, or severe, particularly if considerable time elapses before the vomiting takes place.

1617. If the contents of the stomach are offensive, they should be discharged into a basin partly filled with cold water, as this will prevent the exhalation of unpleasant, or deleterious fumes.

1618. Milk porridge, or unbolted wheat meal gruel (1420, 1424) should be taken freely after vomiting commences, alternating occasionally with a dose of pennyroyal tea, or in the abscence of this, a tea of black birch, catnip, golden rod, summer savory, or any of the aromatic herbs.

1619. If the perspiration dies away before the emetic is all given, half a tea-spoonful or more of cayenne should be added to the subsequent dose, and repeated if necessary.

1620. The patient should not expose his hands and arms during the administration of a course; and when he rises to vomit, the bedclothes should be drawn closely about his neck and shoul-

ders, to prevent his becoming chilled. Wiping his face and hands with a cloth wrung out of cold water, or vinegar, is refreshing, if he is faint or languid from the operation of the lobelia. The application of vinegar to the nostrils, is useful for the same purpose.

1621. In some instances a patient falls asleep after the emetic has been given, and unless he becomes cold or chilly, should not be disturbed. While the skin is moist, and of a natural temperature, we may be assured that the functions of the body are performed in a healthful manner, and sleep under these circumstances will have an invigorating effect.

1622. Within the last year or two, Dr. Thomson has permitted his patients to drink freely of cold water during the operation of the lobelia, but the practice, I am bound to say, is fraught with more or less evil. I have known it to give a sudden check to the vomiting, and produce a severe chill. That a mouthful or two of cold water may be taken occasionally with advantage, particularly if the system is well warmed with cayenne, I do not deny; but large or frequent draughts of it, I am convinced, are capable of doing serious injury. The stomach is readily chilled by the use of cold drinks, and if it falls much below the natural temperature, while the patient is suffering from disease, the whole system becomes sympathetically affected. We have already learned, that a gill of cold water, administered to St. Martin, reduced the temperature of his stomach from one hundred to seventy degrees, and the organ was more than half an hour in regaining the heat which it had lost. (45.) This fact should teach us the impropriety of using cold water during a course of medicine, at least in any considerable quantity, particularly if the patient is of a cold or feeble habit.

1623. *Lingering Nausea.* If the lobelia has been administered in the usual number of doses, and the patient is afflicted with distressing, or long continued nausea, without being able to vomit, the following dose will generally produce the desired effect. Take of cayenne and bayberry tea (1512) a tea-cupful, and dissolve in it a level tea-spoonful of *sal æratus*, or a moderately heaped tea-spoonful of the *bicarbonate of soda*. (1028.) This, taken at one draught, will rarely fail to evacuate the stomach. The alkali is sometimes dissolved in a tea-cupful of warm water, but is not so efficient. Vomiting may be produced in many instances, by swallowing a bowl-ful of milk porridge, or an equal quantity of warm pennyroyal tea; or by pressing firmly with the hands on the region of the stomach; or by changing suddenly from one side to the other. If the perspiration has ceased, or the pa-

tient is cold or chilly, the vapor bath, or the application of heated stones wrapped in damp cloths to the feet and sides, together with the internal use of cayenne and bayberry tea, will generally excite the stomach to discharge its contents.

1624. *Restlessness.* If the patient becomes restless or nervous during the operation of the lobelia, the following preparation may be given with great advantage. Take of scullcap, or lady's slipper, a tea-spoonful; cayenne half a tea-spoonful; sugar any desirable quantity; boiling water a tea-cupful. Steep, and give a table-spoonful of the tea at a dose, repeating it every five or ten minutes. This will quiet the nerves, and aid the operation of the emetic.

1625. *Pain in the Bowels.* Where this is present, relief may be obtained by an injection of warm water and rheumatic drops, in the proportion of a tea-cupful of the former, to a table-spoonful of the latter, repeating it as often as necessary. The common injection, with the omission of the lobelia, may be used in its stead. (1567.) Bathing the abdomen with rheumatic drops, pepper-sauce, or a mixture of vinegar and cayenne, simmered, (1531) will afford more or less relief; and if the pain is obstinate, a flannel moistened with either of these liquids, and warmed by the fire, should be laid over the part.

1626. *Pain in the Head.* This also may be generally relieved by an injection, prepared according to the directions in the preceding paragraph. If the head is hot or feverish, it should be wrapped in a cloth wrung out of cold water, or vinegar, and the application renewed as often as the cloth becomes warm. As soon as the lobelia operates, and the stomach is cleansed, the pain will generally cease. A heated stone wrapped in a damp cloth, should be kept constantly at the feet.

1627. *Excessive Vomiting.* Where this occurs, as it is liable to do by giving a course of medicine without any preparation of the system, or by suffering the patient to become cold during the operation, it it is desirable to afford relief as speedily as possible; and this is to be accomplished by the use of the vapor bath, or the application of heated stones wrapped in damp cloths to the feet and sides of the patient, administering cayenne tea, or pepper-sauce, in table-spoonful doses. By this treatment the circulation is equalized, and the vomiting and irritability of the stomach subside. Cullen says, "In an attack of the plague, a vomiting happens, which prevents any medicine from remaining upon the stomach. Dr.

Sydenham tells us, that he could not overcome the vomiting but by external means, applied to produce a sweat or determination to the surface of the body."

1628. I was called to a gentleman who had been vomiting violently for six or seven hours, in consequence of a lobelia emetic. He was in a cold room, and had perspired but very little. The only matter discharged was pure, yellow bile. I steeped half a tea-spoonful of salt, and a large tea-spoonful of cayenne, in half a tea-cupful of boiling water, adding, in six or eight minutes, sufficient cider vinegar to fill the cup. A table-spoonful of this was given every ten minutes, until three doses were taken, and in the meantime, a heated stone wrapped in a damp cloth, was placed at the feet. This treatment produced perspiration, and the vomiting ceased.

1629. I find a case of excessive vomiting recorded in my manuscript notes, which was related to me by Dr. Thomson. The patient was a Mr. Sherburne of Boston, in whom the difficulty was occasioned by an injection containing an undue portion of lobelia. When Dr. Thomson first saw the case, the vomiting had continued for twelve hours, and was accompanied by great prostration; but by the administration of the vapor bath, it was speedily and effectually checked. Nothing was given internally, excepting a tea-cupful of milk porridge soon after the bath, and some chicken soup in the lapse of an hour.

1630. A cup of table tea, or a tea of spearmint, golden rod, or black birch, will sometimes allay vomiting, but is not to be depended upon in severe cases.

1631. *Ventilation.* The importance of ventilating the sick chamber, particularly during the administration of a course of medicine, has not received that attention which it deserves. The air soon becomes contaminated, and often highly deleterious, and if ventilation is not resorted to, will have a powerfully depressing influence on the patient. Dr. Combe observes, "fainting and hysterics occur in churches much more frequently in the afternoon than in the forenoon, because the air is then vitiated to the fullest extent by breathing." Dr. Reid, who was appointed to ventilate the English house of Parliament, allotted ten cubic feet of air a minute to each of the members and officers, and did not consider this supply any more than adequate to their wants.

1632. "About one hundred years ago, when the pauper infants of London were confined in the work-houses amid impure air, not more than one in twenty four lived to be a year old, so that out of *two thousand eight hundred* received into them, *two thousand six hundred and ninety* died yearly; but when the con-

ditions of health came to be better understood, and an act of Parliament was obtained compelling the parish officers to send the infants to nurse in the country, this frightful mortality was reduced to *four hundred and fifty* annually."

1633. The Englishmen who were confined in the Black-Hole at Calcutta, furnish an example of the horrible effects of a pent up and vitiated atmosphere. One hundred and forty six of them were hurried into a dungeon eighteen feet square, which had only two small windows on one side for the admission of fresh air. In a few minutes they fell into a profuse perspiration, which was succeeded by a raging thirst. In less than an hour their respiration became difficult, and their cries for water were dreadful in the extreme. Within three hours most of them were dead, and those who survived, were in a raging delirium. At six in the morning, a period of about twelve hours, when an order came for their release, only *twenty three* were found alive, and most of these were in a putrid fever.

1634. In giving a course of medicine, the room should be ventilated during the operation, particularly if the air acquires an unpleasant smell. A door or window should be opened, so that the patient will not be exposed to the draught; or he may be protected from it by throwing a light quilt over his head. In cold weather, a fire will generally be sufficient for the purpose of ventilation, provided the room is furnished with a fire-place. The fumes of vinegar are of no service in a sick chamber, for they conceal the bad air, without purifying or rendering it fit for respiration. Charcoal should never be burnt in a close apartment, as it evolves carbonic acid gas, which is destructive to life. The gases from stone coal also, are more or less injurious to patients.

1635. I have known deplorable consequences to ensue from a want of ventilation. I was once called to a young man in consumption, whom I found in a small room not more than eight feet square, into which the fresh air had no access, excepting when the door was casually opened. On entering the apartment, I was almost suffocated from the closeness of the atmosphere. I ordered the patient to be removed to a large room, where the air could circulate freely, and he soon recovered from the stupid and almost exhausted condition in which I found him.

1636. *Conclusion of the Course.* After the emetic has done operating, a second vapor bath is to be administered, preceded by an injection similar to the one with which the course was commenced, (1605) excepting that the lobelia may be omitted, or diminished in quantity. While in the bath, the patient should

drink a tea-cupful of some warming tea, as ginger, composition, or cayenne. If the latter is employed, it should be taken in divided portions, unless preceded by a draught of milk porridge, for if the stomach is empty, it is liable to occasion pain or distress. As soon as a free perspiration ensues, which will be in from ten to twenty minutes, the *cold shower* is to be administered, according to the directions given under that head. (See paragraphs 1504–5–6–7.) The patient may now dress himself, if he has sufficient strength, or return to bed, the sheets having been previously changed. A tea of composition, or cayenne and bayberry, should be given occasionally to keep the skin moist—at least for two or three hours after the *course*. This is particularly desirable in severe attacks of disease. If the patient is seated by the fire, he should be covered with a blanket, and if his feet are cold, he should place them on a heated stone, or brick. Sitting with the back to the fire has a beneficial effect, particularly in low chronic cases, for through the influence of the spinal nerves, a pleasant sensation of warmth is communicated to every part of the body. In warm weather, the patient should be careful not to expose himself to a draught or current of air, for the good effects of a *course* are sometimes wholly counteracted in this way. He should be content, also, to remain within doors until the next morning, unless the weather is mild and pleasant, and other circumstances are favorable to exercising in the open air.

1637. Bathing the surface with a mixture of cayenne and vinegar, after the bath, (1531) or rubbing it with *stimulating liniment*, is useful in many forms of disease, (1306, *et seq.*) and renders the patient less susceptible to the effects of cold.

1638. If languor or debility succeeds a *course*, a tea of spiced bitters should be used, prepared by steeping three tea-spoonfuls of the powder in a pint of boiling water, and adding sugar to make it agreeable. This may be employed as a drink, and is strengthening to the stomach, and general system. In fevers and inflammations, it should not be used until the disease is entirely subdued. (883.)

1639. Where a patient is restless or nervous, there is no better remedy than the *nervine tea*. (1514.)

1640. It is improper to sleep in a cold room after a *course*, particularly in low or doubtful cases of disease, and I am convinced that much injury is done by this practice. Breathing the cold air for several hours through the night, causes, in many instances, an aggravation of the symptoms. Dr. Jackson, formerly a physician to the Massachusetts General Hospital, remarks, "In the day, the temperature of our wards is rarely lower than 65 degrees of Fahrenheit; and I believe that it is rarely lower than 50

degrees in the most severe nights. When it has been very low in the night, I have usually discovered it by an increase of disease in several patients on the next day."*

1641. In asthma, croup, consumption, and various other disorders, it is important that there should be a uniform temperature. With regard to consumption, some very interesting remarks will be found in Mr. Slade's Travels in Russia.† Speaking of the climate at Odessa, he says, "it may be supposed that pulmonary complaints are very common, but this is not the case, owing to the uniform temperature which is kept up by means of stoves, throughout halls, stair-cases, saloons, and bed-rooms. Were the practice introduced into England, of maintaining all the interior of a house at the same temperature, consumption would, in many cases, be prevented. A delicate girl in England, whose pale face, bright eyes, and sensitive frame indicate a predisposition to consumption, sits all day in winter in a drawing room at a temperature of 65 or 70 degrees of Fahrenheit, and passes the night in a room 15 or 20 degrees cooler. Having thus breathed cold air for seven or eight hours, she descends in the morning to inhale anew a heated atmosphere, and this action and reaction on the lungs continue, till the doctor oracularly announces consumption."

1642. Mr. Slade observes, that "in European Turkey and Russia, the first question the traveller asks in winter, on arriving at his night's station, is, 'Have you a warm room?' If that is answered affirmatively, he is satisfied; and I can speak particularly of the beneficial effects of sitting and sleeping in rooms of uniform temperature. Until I arrived at Odessa, I never passed a winter without having a severe cough; but there I was entirely free from the malady, though the changes from heat to cold, and vice versa, were more sudden than had been usually remembered by the inhabitants."

1643. In retiring to bed for the night, after a course of medicine, a tea-cupful of composition tea should be administered, and if necessary, a bottle of hot water wrapped in a damp cloth (1608—Note.) placed at the feet. Where the stimulus of cayenne is not required, bayberry tea may be used instead of the composition; and if the patient is nervous, half a tea-spoonful of scullcap or lady's slipper may be added.

1644. *Food.* In severe acute affections, as bilious, scarlet, and typhus fevers, the appetite is generally deficient, and the

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* Dr. Jackson's Appendix to Dr. Putnam's Translation of Louis on the Effects of Blood-letting, &c. Boston, 1836.

† London edition, 1840.

stomach incapable of digesting solid food; the strength of the patient should be sustained, therefore, by the use of bland and nourishing fluids, such as milk porridge, beef tea, and wine whey, which will not enfeeble or irritate the digestive organs. In the milder attacks of disease, and in chronic complaints, a course of medicine is usually succeeded by a good appetite, but it is not safe to indulge it too freely. It is at best a fallacious guide, and if a patient should eat until its cravings are satisfied, he will often overload the stomach, and increase the disorder which he is endeavoring to remove. I have invariably observed, that where a temperate meal is taken after a *course*, the individual enjoys a greater degree of bodily comfort, and improves much more rapidly in health. The kind of food, also, is worthy of a passing notice. Oily substances, such as fat meat, and butter, are difficult of digestion, (87) and should be avoided. This is particularly necessary in diseases of the skin, liver complaints, boils, consumption, dyspepsia, gout, heartburn, headach, jaundice, scrofula, tetter, and chronic ulcers. Stale and rancid butter should never be eaten under any circumstances. Rich pastry, gravies, mince pie, tea, coffee, cheese, and so on to the end of the chapter, are all injurious, and should be discarded by every *invalid*, however much he may be disposed to use them while in health. Tea and coffee are slow poisons, and do immense injury to the human system. Of the latter, I can speak from experience, for it injured my health seriously, before I was fortunate enough to discover the cause. With regard to tea, Dr. Burdell of New York, has discovered that a few drops of the concentrated decoction, will kill a rabbit, in a few minutes. I am aware that I am attacking popular prejudices, in denouncing these two beverages, but no consideration of interest shall deter me from the performance of what I conceive to be my duty.

1645. Among the articles of food which may be eaten after a course, where solid aliment is not an objection, are sago, rice, tapioca, wheat jelly, the unbolted wheat bread, soft boiled eggs, and the lean part of meat, provided the individual has been accustomed to animal food. The plainer each dish is cooked, and the fewer articles taken at one meal, the better it will be for the patient. Nothing is more injudicious than the practice of eating every *dainty* which the nurse, or kind but inconsiderate friends may be pleased to furnish. I would particularly recommend the *wheat jelly* (1435) as an article of diet, for it is not only nutritious, but serves to regulate the bowels.

ACCIDENTAL SYMPTOMS.

1646. These I have so termed, because they occasionally arise during the administration of a *course*, without being of common occurrence. Dr. Thomson calls them the "alarming symptoms," and says they indicate a crisis in the disease. He has known a patient to sob for hours, without being able to lift his hand to his head, and yet be on his feet the next day, attending to his business. He remarks, that persons who have taken a considerable quantity of opium, will sometimes be thrown into a state of unconsciousness, and appear to be dying, but in a few hours awake, as if from a refreshing sleep, and speedily regain their health and vigor.

1647. The "alarming symptoms" do not often occur, says Dr. Thomson, excepting in chronic diseases, and not until from three to eight *courses* have been given. I have met with them in a few instances, but believe they may be prevented by judicious management. Where courses follow each other in rapid succession, with but little attention to the *intermediate treatment*, they are almost sure to supervene; but I venture to predict that they will rarely or never occur, if a course is not administered oftener than once or twice a week, as is now the practice in chronic diseases, and the warming and invigorating medicines used freely in the intervals.

1648. *Relaxation.* This is an effect of the lobelia, and is not owing to actual debility or prostration, but a relaxation of the voluntary muscles. (26.) The patient may be unable to turn in bed, and yet in the lapse of an hour, or even less, be in the full possession of his strength. The pulse meanwhile is generally regular, showing that the heart performs its functions in a healthful manner. In subduing a fever, or inflammation, relaxation generally occurs, and this is apt to excite alarm in the minds of those unacquainted with the medicine, when in fact it is only an evidence that the remedy has triumphed over the disease. The system recovers from this relaxation in a very short time. I have myself, in undergoing a course of medicine, been unable to speak above a whisper, and yet in an hour have regained my original strength and vigor. The relaxation which is produced by lobelia and the vapor bath, is very different from the debility or prostration which ensues from blood-letting, and the use of mineral or vegetable poisons.

1649. *Delirium.* This is usually the result of carelessness, or improper treatment. If a course of medicine is given without any preparation of the system, (1596, *et seq.*) or if the patient is suffered to become cold or chilly during the operation, slight or temporary delirium will sometimes be the consequence. Where opium, or any of its preparations, has been taken in a considerable quantity, it is much more apt to occur. The poison no doubt remains dormant in the system, and is roused into action by the agents employed in the administration of a course. (495.) I have witnessed several cases of delirium, caused, as I supposed, by the previous use of opium, but none more remarkable than that of Miss Heard, residing at the time in Boston. She was afflicted with an obstinate nervous complaint, and by the advice of her physician, had taken freely of opium, and laudanum. Finding no relief, she adopted the reformed practice, and while undergoing the second course of medicine, became delirious, talking incoherently, and alternately laughing and crying. Her friends, who were opposed to the treatment, assembled around her, and declared that she would die. In about three hours, however, she sunk into a refreshing sleep, from which she awoke without any recollection of what had past. Delirium occurred during the two successive courses, which is a very unusual thing, and each time while she was in the second vapor bath. After the third and final attack, she began to improve in health, and was ultimately cured of her malady. During the continuance of the delirium, an occasional dose of *nervine tea* (1514) was administered, and her feet kept warm by the application of heated stones wrapped in damp cloths.

1650. *Purging.* This arises where purgatives have been taken in repeated doses, and remain in the bowels without operating. I will mention a case by way of illustration. A gentleman in Boston was attacked with a fever, and called in a physician, who gave him a succession of cathartics, but they produced no effect. The patient became alarmed, and sent for a reformed practitioner to give him a course of medicine. The course was commenced without any preparation of the system, and during the operation, the hitherto dormant physic was roused into action. The purging was severe, and it was found to be almost impossible to check the discharges. It is important, therefore, where the bowels are loaded with cathartics, that the warming medicines, together with injections, be used for a day or two previous to giving a course.

1651. Purging takes place in a few instances where cathartics have not been used, but upon what it depends, I am not able to

explain. It appears, however, to form a crisis in the disease, and to terminate without injury to the patient, excepting the debility which naturally arises from the copious evacuations. The treatment in such cases, should consist in the use of medicines to keep a determination to the surface of the body. Cayenne and bayberry tea, with a portion of scullcap and slippery elm, may be taken internally, and the same administered by injection. Advantage will be derived also, from bathing the abdomen frequently with rheumatic drops, or tincture of cayenne.

1652. *Coldness of the Body and Extremities.* Like many of the accidental symptoms, this would not probably occur, if the warming medicines were given a few days in advance of the *course.* I will mention a case in point. Mrs. B——, a lady of a spare habit, had been suffering for some weeks with a severe cold, and her husband, who was an advocate of the reformed practice, prevailed upon her to take a course of medicine. Accordingly, the usual preparations were made, and several doses of lobelia administered, but the patient had no disposition to vomit. On the contrary, she became cold and stupid, manifesting a strong disposition to sleep, and resembled one who had taken opium. Heated stones wrapped in damp cloths were placed at her feet and sides; stimulating injections were administered; the skin was bathed from head to foot with pepper-sauce, and rubbed briskly with the hand; and cayenne, composition, and other teas given internally. Notwithstanding this treatment, however, no improvement took place in her condition until after the lapse of about eight hours, when her skin became warm, and the distressing symptoms almost immediately disappeared. She did not vomit at all, and by the expiration of twenty four hours, was in the enjoyment of her usual health, having been entirely cured of her malady.

1653. Here was an instance in which the system should have been warmed and invigorated by the use of cayenne, and other appropriate medicines, (1597) for two or three days before the course was administered, and then the unfavorable symptoms, mentioned above, would not have occurred. The practice of giving courses without any preparatory treatment, where the system is in a cold and sluggish condition, is quite too prevalent; and the evils which follow, are not to be attributed to the remedies themselves, but to the thoughtless and injudicious manner in which they are employed.

1654. *Irregular, or Difficult Breathing.* This, I have observed, is usually caused by an undue weight of bedclothes, as is evident from the relief afforded by sponging the face and

breast of the patient with cold water, or by lifting or fanning the bedclothes, so as to admit the fresh air to his person. I will mention two or three examples.

1655. Mr. K—— of Boston, was attacked with difficult breathing while undergoing a course, and his friends supposed him to be dying. Dr. Thomson was sent for, who immediately stripped off the bedclothes, and dashed a quart of cold water over him. He revived the moment the application was made, and breathed as freely as ever.

1656. A course of medicine was administered to a child, whose breathing became difficult. A reformed practitioner was sent for, who found it wrapped in a heavy blanket, and nearly smothered in the nurse's arms. It was laid upon a mattress, a thin quilt thrown over it, and its face and breast bathed with cold water. Nothing further was required to afford it entire relief.

1657. A young man who had been an invalid for several months, entered an infirmary to take a course of medicine. This was commenced without preparatory medicines to warm or invigorate the system. The lobelia was administered in the usual number of doses, and was followed by laborious breathing. I was invited to examine the patient, and found him with a rapid pulse, and a moist and warm skin. He was covered by a heavy weight of bedclothes, which were drawn closely about his neck and head to prevent the slightest access of air to his person. A heated stone wrapped in a damp cloth had also been placed at his feet. I removed the bedclothes, and sponged his face and breast with cold water, which immediately revived him, and there was no further difficulty in the case.

1658. Whether difficult breathing is accompanied by a moist and warm, or a dry and cold skin, the sponging may be employed with an equal degree of advantage. Dr. Comfort of Philadelphia, mentioned to me a case in which the skin became cold, and the face almost livid, and yet the sponging, as previously directed, afforded prompt and decided relief.

1659. There is a determinate relation between the heat of the body, and that of the surrounding medium, which should always be kept in view. Boerhaave supposed that a person could not live when exposed to a temperature greater than that which is natural to the body, but this was disproved by some young women in Germany who went into a heated oven at the temperature of 278 degrees of Fahrenheit, and remained in it about twelve minutes.* A person in health is capable of resisting a high degree of heat, but in some forms of disease, a slight elevation of the sur-

* Bell's Anatomy and Physiology, 6th American edition.

rounding medium becomes oppressive. Cholera patients, for example, who have been debilitated by profuse discharges by stool, will often faint in the vapor bath at a low temperature, unless the vapor is introduced slowly, and cold water sprinkled over them occasionally. In suspended animation, we know that external warmth must be applied to the surface very gradually, or it will be impossible to revive the latent spark of life. The external heat, therefore, must be regulated according to the condition of the patient, for what is suitable in one case, may have a depressing influence in another, and perhaps be the means of destroying life.

INTERMEDIATE TREATMENT.

1660. By this term is understood the administration of appropriate remedies between the courses of medicine, which is of the utmost importance, and should never be neglected. In *acute attacks* it requires to be active in proportion to the violence of the disease, administering a tea of composition, or of cayenne and bayberry sufficiently often to keep a gentle perspiration, and adding to it a portion of scullcap, or lady's slipper, if the patient is nervous. Injections also are of eminent service, independent of the evacuation of the bowels, and may be repeated two or three times a day, or every hour, if necessary. In severe attacks of fever, whatever may be its type or character, the treatment here specified must be rigidly pursued, or the skin will become hot and dry almost immediately after a course. The *stimulating tea*, (1515) is well adapted to keep the skin moist, and maintain the equilibrium of the circulation. In the meantime, a bottle of hot water wrapped in a damp cloth should be placed at the feet, unless the weather is so warm as to render it oppressive. In all cases where the skin is *inordinately hot*, it may be sponged with cold water. This application affords prompt and decided relief, and is not a dangerous experiment, as many people have been led to suppose.

1661. If the disease continues unchecked, notwithstanding this treatment, the course of medicine should then be repeated.

1662. In complaints of the bowels, headach, pains in the back, kidneys, womb, or any other organ or part of the body, injections may always be employed with advantage.

1663. In fevers, and inflammations, the tonic medicines should not be used until the disease is subdued. They are then important, particularly in debility, loss of appetite, or weakness of the digestive organs. The best tonic is the *spiced bitters*.

1664. Thirst may be more effectually relieved by cayenne tea than by any other remedy. It may be taken in the dose of a table-spoonful, and repeated every fifteen or twenty minutes, until the desired effect is produced. It is very beneficial in fevers accompanied with a dry or parched mouth.

1665. If the stomach is much disordered, as is usually the case in severe acute attacks, the patient should be fed with liquid instead of solid food, for reasons which have been assigned. (1644.)

1666. The sick room should be kept perfectly clean and sweet. The stools, and every thing capable of tainting the air, should be immediately removed. The apartment should also be ventilated two or three times a day, particularly in diseases which have a putrid tendency, taking care not to expose the patient to the draught. (1634.) The importance of pure, fresh air, in the treatment of the sick, does not appear to be sufficiently understood or appreciated.

1667. *Chronic Diseases.* The *intermediate treatment* in chronic diseases is necessarily varied according to the nature or severity of the complaint, but in obstinate cases, it usually consists of a dose of spiced bitters before each meal, a tea-cupful of cayenne and bayberry tea in the forenoon, another in the middle of the afternoon, and a third on going to bed. An injection will also be beneficial at bed time, whether the bowels are costive or not, for it warms and invigorates the whole system; and if the weather is cold, or the patient chilly, a bottle of hot water wrapped in a damp cloth should be placed at his feet.

1668. In many cases, no further treatment is required between the courses, than an occasional dose of spiced bitters and composition, using the first when the appetite is deficient, and the second when there is any necessity for a stimulant. If the individual is obliged to be in the open air, he should take these medicines in cold or lukewarm water. (1243, 1247.)

1669. Where the feet are habitually cold, advantage will be derived from sprinkling the soles of the stockings with cayenne pepper.

1670. In weakness or irritability of the nervous system, the *nervine tea* will be beneficial. (1514.)

1671. I have heard practitioners question the propriety of administering bayberry to patients with pulmonary difficulties, but in combination with cayenne, as recommended, I have always found it to be an invaluable remedy. It acts upon the mucous membrane of the stomach as a *detergent*, (807, 822) and removes or detaches the vitiated secretions, which is an important matter in

the treatment of all diseases, and particularly affections of the lungs. In some instances, however, the stomach is irritated by the indigestible woody matter of the bayberry, and in that case, the tea should be administered without the sediment. The same remark is applicable to other medicines. (885.)

1672. The lobelia pills (1298 *et seq.*) are highly serviceable as a part of the *intermediate treatment.* The anti-dyspeptic bread, wine bitters, vegetable jelly, and other preparations, may also be used if deemed expedient or necessary.

1673. Patients who have but little animal heat, would do well to take an extra vapor bath, two or three times a week, following it with an application of the *stimulating liniment.* (1306 *et seq.*)

1674. Particular attention should be paid to the condition of the bowels, and whether costiveness or diarrhœa prevail, equal advantage will be derived from the use of injections. These may be administered once or twice a day, or oftener, as the case may seem to require. With regard to costiveness, I will add, that there is no better remedy than the unbolted wheat bread, (1181, *et seq.*) or wheat jelly, (1435) for it is not only nourishing, but produces natural evacuations without irritating the bowels. Where there is a tendency to costiveness, the patient should omit the use of tea, coffee, lean meat, pies or cakes made of superfine flour, and all similar articles of food.

1675. Exposure to a damp or cold atmosphere should be avoided, particularly in the morning before breakfast. The latter is sometimes injurious even to persons in health. Exposure, also, to the morning sun in a low or marshy district, while the stomach is empty, is more or less pernicious. In some parts of Europe, the officers do not march their troops until they have breakfasted, and the observance of this rule contributes greatly to their health, and freedom from malarious and other diseases. A writer on dietetics remarks, "Where fever is in a family, the danger of infection will be much greater to a person going directly from his own bed to the bed-side of the patient, than to one who first takes the precaution of drinking, were it only a cup of coffee."

1676. If the urine is scanty between the courses, the *diuretic tea* (1516) may be used, or a tea of cool wort, cleavers, poplar bark, or spiced bitters.

1677. *Cold night sweats* cannot be better treated than by the administration of a vapor bath at bed time, (1483) followed by an application of the stimulating liniment, (1306, *et seq.*)

1678. The skin should be rubbed night and morning with a coarse towel, or flesh brush, until it is in a glow. This practice is of the utmost importance, as will be acknowledged by

every one acquainted with the functions of the skin, (42–3) and in obstinate or lingering chronic complaints should never be omitted.

1679. Another valuable remedy in overcoming many forms of chronic disease, and strengthening a feeble constitution, is the application of cold water to the surface of the body, every morning, immediately upon rising from bed. For this purpose, either the shower, sponge, or hand bath may be used, according to the circumstances of the case. (See paragraphs 1451–2–3–4–5.) If the patient is easily chilled, the *hand bath* will be preferable, as it abstracts but a small portion of the animal heat. I may add, that the bath is never beneficial, excepting where it is followed by a warm glow of the skin; and on that account, it is improper to use it, in some instances, without previously invigorating the system with courses of medicine.

1680. *Diet.* The meals should be taken at regular hours, and nothing eaten in the intervals. After the stomach has digested a meal, it requires an interval of repose, or it will soon be worn out by an excess of labor. It must have rest, as well as the body after severe or fatiguing exercise. By inattention to this matter, dyspepsia, heartburn, and a whole host of maladies arise. "Sir Francis Head, in his humorous book entitled Bubbles from the Brunnens of Nassau, expresses his astonishment at the 'enormous quantity of provision' which the *invalids* and sojourners at these watering places 'so placidly consume;' and after noticing 'the heavy masses which constitute the foundation of the dinner, and the successive layers of salmon—fowls—puddings—meat again—stewed fruit—and, lastly, majestic legs of mutton, which form the lighter superstructure,' he adds, 'nothing which this world affords could induce me to feed in this gross manner. The pig which lives in its sty, would have some excuse; but it is really quite shocking to see any other animal overpowering himself at mid-day with such a mixture and superabundance of food.' In another page, he remarks, 'that almost every malady to which the human frame is subject is, either by high-ways or by-ways, connected with the stomach; and I must own, I never see a fashionable physician mysteriously counting the pulse of a plethoric patient, or, with a silver spoon on his tongue, importantly looking down his red, inflamed gullet, but I feel a desire to exclaim, 'Why not say to the poor gentleman at once—Sir, you've eaten too much, you've drank too much, and you've not taken exercise enough.'"*

1681. Late suppers are particularly injurious, and every invalid should impress this fact indelibly upon his mind.

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* Combe on Digestion and Dietetics. Boston, 1836

1682. Moderate exercise after a meal facilitates the digestive process, as was shown by Dr. Beaumont, in his experiments on St. Martin. (93.)

1683. The excessive use of meat in this country is a serious evil, and has no doubt injured or destroyed the health of thousands. Magendie remarks, that the blood of a meat eater, after it is removed from the circulation, soon becomes putrid, whereas the blood of a vegetable eater continues sweet for a considerable length of time. This proves that animal food has a tendency to render the blood impure, and hence the rapidity with which it putrefies. I have been long convinced of the truth of these premises, for I have observed that fevers, inflammations, and diseases of every description, are much more difficult to cure where the patients have been accustomed to indulge freely in animal food, than where they have confined themselves principally to vegetable aliment, living temperately, and avoiding the use of spirituous liquors.

1684. There is a prevalent opinion that meat is indispensable to those who are engaged in active or laborious employments, but it is forgotten that it contains a less amount of nutriment than wheat, rye, barley, peas, beans, rice, and other articles which constitute the food of the vegetable eater. M. M. Percy and Vauquelin, two celebrated chemists, and members of the French Institute, made a series of experiments a few years ago to ascertain the relative amount of nutriment contained in different articles of food, and the following is the result of their labors.

100 lbs. of	Bread	contain	80 lbs.	of nutriment.
"	Meat, the average,	"	35	"
"	French beans	"	92	"
"	Broad kidney beans	"	89	"
"	Lentils	"	94	"
"	Potatoes	"	25	"
"	Carrots	"	14	"
"	Greens and turnips	"	6 to 8	"

1685. The following table is also derived from chemical experiments, and presents us with the relative proportions of nutriment in substances not mentioned by Messrs. Percy and Vauquelin.

100 lbs. of	Wheat	contain	85 lbs.	of nutriment.
"	Rye	"	80	"
"	Barley	"	83	"
"	Rice	"	90	"
"	Beets	"	14	"
"	Cabbage	"	7	"

1686. We perceive, therefore, that many of the vegetable substances used as aliment contain more nutriment than meat, and experience has shown that they are equally well adapted to our physical wants. I am aware that an individual, in reforming his habits, and substituting vegetable for animal food, is liable to experience a sense of languor or debility for a few weeks, but as soon as his system is adapted to the change, he will soon regain the strength and vigor which he has lost. Any prominent change in our habits is followed by more or less inconvenience. I know a gentleman who lived for three years on vegetable food, and at the end of that time, from a new arrangement in his family affairs, returned to the use of meat, eating it, as people generally do, two or three times a day; but he soon experienced a great degree of debility, and it was several weeks before he acquired his usual strength. Those who wish to renounce the habit of flesh-eating, therefore, should either do it gradually, or be prepared to suffer a temporary inconvenience.

1687. I formerly believed, in common with the generality of mankind, that meat was an indispensable article of food, particularly to the laboring man, but have had abundant reason to change my opinion. I have had free intercourse for two or three years with a large number of physiological reformers, who subsist entirely upon vegetable food, and find they are much more healthy and vigorous than those who make use of meat. Some of these reformers are laboring men, who are compelled to work hard from the rising to the setting of the sun, and they assure me they possess a greater amount of physical strength, than when in the habit of flesh-eating. Moreover, they always have a relish for their meals, without being troubled by a loss of appetite at one time, or the cravings of hunger at another. They are comparatively exempt, also, from attacks of disease, such as colds, diarrhœa, dysentery, and the prevailing maladies of the seasons; and among the whole of these reformers, I rarely or never met with a case of costiveness, or sick-headach—complaints which are so universal at the present day.

1688. In my travels in Ireland, I could not but observe the healthy appearance of the peasantry, and from the high price of meat in that country, I presume they scarcely taste it once a year. They live principally upon potatoes.

1689. Persons who are much in the open air, and enjoy plenty of exercise, may eat meat, oftentimes, with impunity; but those of sedentary habits, or feeble digestive powers, are liable to be injured, particularly if they use it in any considerable quantity. The *fat* of meat, however, is much more objectionable than the *lean*, for the former, together with all oily or greasy substances, is diffi-

cult of digestion, and according to Dr. Beaumont, invites a flow of bile into the stomach to aid in the digestive process.* This produces a morbid condition of the organ, and is no doubt the cause of one half the maladies with which mankind are afflicted. Bile, it will be remembered, was not designed by nature for admission into the stomach; (73, 74) but by the use of animal fats, we cause it to flow into that organ, thereby violating one of the established and most salutary laws of the animal economy. Of course, we must expect to suffer the penalty attached to the violation.

1690. "That fat meat contains more nutriment than almost any thing else," says Dr. Alcott, "I am not disposed to deny; but that the stomach can extract a large proportion of this nutriment, is more doubtful. My belief is, that where we are trained to the use of much fat, the stomach acquires the power of digesting a small portion of it—enough, at least, to sustain a measure of health and longevity; but that it is a process so contrary to the best intentions of nature respecting us, that it is done at a very great, and in our climate unnecessary, expenditure of the vital power. The poor Greenlanders and Esquimaux, though apparently driven to the necessity of subsisting chiefly on fat, maintain but a miserable existence on it; nor is that existence very long. In our own more temperate climate, the system finds great difficulty in digesting oil, even where we have been early trained to it; and in tropical climates a greater difficulty still."†

1691. "The use of swine's flesh," says Dr. Adam Clarke, "in union with ardent spirits, is, in all likelihood, the grand cause of scurvy, which is so common in the British nation, and which would probably assume the form and virulence of a leprosy, were our climate as hot as that of India."

1692. Sinclair, in his Code of Health, says, "The late Sir Edward Barry prevailed with a man to live on partridges without vegetables; but after a trial of eight days he was obliged to desist, in consequence of strong symptoms of incipient putrefaction."

1693. Abstinence from animal food, says Shelly, the poet, subtilizes and clears the intellectual faculties.

1694. "India, of all the regions of the earth," says Ovington, in his voyage to Surat, "is the only public theatre of justice and tenderness to brutes and all living creatures; for there, not confining murder to the killing of man, they religiously abstain from taking the life of the meanest animal."

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* Experiments and Observations on the Gastric Juice, p. 264. Plattsburgh, 1833.
† Young Housekeeper, p. 85.

1695. St. Pierre, in his Study of Nature, remarks, "The nations that subsist on vegetable diet are of all men the handsomest, the most robust, the least exposed to disease and violent passions, and attain the greatest longevity. The Brahmins of India, who frequently survive a century, eat nothing but vegetables.

1696. "Vegetable aliment," says Dr. Graham of Scotland, "has no tendency to produce those constitutional disorders which animal food so frequently occasions; and this is a great advantage, especially in our country, where the general sedentary mode of living contributes so powerfully to the formation and establishment of numerous severe chronic maladies. Any unfavorable effects vegetable food may have on the body, are almost wholly confined to the stomach and bowels, rarely injuring the system at large. This food has also a beneficial influence on the powers of the mind, and tends to preserve a delicacy of feeling, a liveliness of imagination, and acuteness of judgment, seldom enjoyed by those who live principally on flesh."*

1697. The same writer says—"It is known that the celebrated Galen was born with an infirm constitution, and afflicted in the early part of his life with many and severe illnesses; but having arrived at the twenty eighth year of his age, he was brought after due observation, and consideration, to believe that there were sure methods of preserving health and prolonging life; and having resolved to live thereby, he observed them so carefully, as never after to have labored under any disorder, excepting occasionally a slight feverishness for a single day, owing to fatigue occasioned by waiting upon his patients. By these means he attained the age of more than seventy years. We are certain also, that the noble Venetian, Cornaro, perfectly restored his health after the age of forty, and prolonged his life to above a hundred years, by living according to the same rules. Admiral Henry of Rolvenden, who is, I believe, now living, was, as late even as his fiftieth or sixtieth year, almost a martyr to various chronic diseases, had been made a cripple by them, and was entirely restored by carefully and perseveringly observing a proper course of living. Some years ago he had reached the age of ninety one, was then totally without complaint, and could walk three miles to the neighboring town of Tenderden without stopping. Such are a few of the many examples which might be produced, proving the extraordinary and almost incredible power of a correct diet and regimen, both in the prevention and cure of disease, and the prolongation of life."

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* Sure Methods of Improving Health and Prolonging Life.

1698. It is not only in the *quality* of food that we err, but also in the *quantity*. The latter, I am persuaded, is a more frequent source of evil than the former. The stomach is overloaded, and the food, not being digested, proves a source of irritation to the organ, which sympathetically affects the whole system. "Intemperance in eating," says Professor Caldwell, "is perhaps the most universal fault we commit. We are all guilty of it, not occasionally, but habitually, and almost uniformly, from the cradle to the grave. It is the bane alike of our infancy and youth, our maturity and age. It is infinitely more common than intemperance in drinking; and the aggregate of the mischief it does is greater. For every reeling drunkard that disgraces our country, it contains one hundred gluttons—persons, I mean, who eat to excess and suffer by the practice."

1699. Sir Francis Head, from whom I have already quoted, very emphatically remarks, "There exists no donkey in creation so overladen as our stomachs."

1700. Dr. Abercrombie says, "I believe that every stomach, not actually impaired by organic disease, will perform its functions if it receive reasonable attention; and when we consider the manner in which diet is generally conducted, both in regard to quantity and to the variety of articles of food and drink which are mixed into one heterogeneous mass, instead of being astonished at the prevalence of indigestion, our wonder must rather be, that, in such circumstances, any stomach is capable of digesting at all. In the regulation of diet, much certainly is to be done in dyspeptic cases by attention to the quality of the articles that are taken; but I am satisfied that *much more depends upon the quantity*, and am even disposed to say, that the dyspeptic might be almost independent of any attention to the quality of his diet, if he rigidly observed the necessary restrictions as to quantity."*

1701. Galen, although he flourished more than *sixteen centuries* ago, promulgated some excellent ideas on the subject of diet, which we *moderns* would do well to regard. "I beseech all persons," says he, "who shall read this work, not to degrade themselves to a level with the brutes or the rabble, by eating and drinking promiscuously whatever pleases their palates, or by indulging their appetites of every kind. But whether they understand physic or not, let them consult their reason, and observe what agrees and what does not agree with them; that, like wise men, they adhere to the use of such things as conduce to their health, and forbear from every thing which they find, by their own

* Diseases of the Stomach, &c 1st edition, p. 72.

experience, to do them hurt; and let them be assured, that by a diligent observation and practice of this rule, they may enjoy a good share of health, and seldom stand in need of physic or physicians."

1702. Mr. Graham, author of the Science of Human Life, speaking of the *quantity* of food necessary for man, remarks, "A very small quantity of good farinaceous food, is sufficient to supply the alimentary wants of the vital economy, even of the most robust body of an active laborer; and all that exceeds the proper supply of these wants, necessarily oppresses the organs, diminishes the muscular power, and serves to impair, wear out, and break down all the energies of the system. It is however, impossible to state any particular quantity of food, which would be best for every one, of every age, situation, and condition. The active, vigorous, laboring man of middle age, requires more food than a child, or an old man, and more than a sedentary, or studious, or feeble man of the same age; and the same individual requires more food under some circumstances, than under others. The only general rule I can give, therefore, in regard to the quantity proper for man, is this: Let every one consider that excessive alimentation is one of the greatest sources of evil to the human family in civic life; that every member of society has a continual and powerful tendency to this excess; and therefore, that every individual should, as a general rule, restrain himself to the smallest quantity, which he finds from careful investigation, and enlightened experience and observation, will fully meet the alimentary wants of the vital economy of his system—knowing that whatsoever is more than this is evil! And let every one remember also, that, as a general rule, there cannot be a blinder guide, in regard to quantity of food, than appetite; and he who follows it, will surely be led into excess; for the most active and vigorous laborer cannot habitually eat artificially prepared food, even of the simplest and plainest kind, till his appetite is perfectly satisfied, without sooner or later experiencing serious evils from excessive alimentation; and if this is true of the robust, active laborer, to a much greater extent is it true of the inactive, sedentary, studious and feeble."

1703. "There is no subject of dietetic economy," says Dr. Beaumont, "about which people err so much, as that relating to *quantity*. The medical profession, too, have been accessary to this error, in giving directions to dyspeptics to eat until a sense of satiety is felt. Now, this feeling, so essential to be rightly understood, never supervenes until the invalid has eaten too much, if he have an appetite, which seldom fails him. Those even who are not otherwise predisposed to the complaint, frequently induce

a diseased state of the digestive organs by too free indulgence of the appetite. Of this fact, the medical profession are, generally, not sufficiently aware. Those who lead sedentary lives, and whose circumstances will permit of what is called free living, are peculiarly obnoxious to these complaints. By paying particular attention to their sensations during the ingestion of their meals, however, they may avoid all difficulty."

1704. Dr. Parmly says, "I suffered much in former years from debility, and other forms of indisposition, induced, I am persuaded, by gross and improper diet. For the last year I have abstained from all exciting drinks, utterly relinquished the use of tea and coffee, abstained from animal food of every name and nature, and by this course of conduct have found my health so much benefited, that I feel it a duty as well as a pleasure to endeavor to impress upon the reader the necessity of living more frugally, if he wish to enjoy that health of body and tranquility of mind, which none can enjoy, for any great length of time, but such as live in accordance with the rules prescribed by all sound philosophers, both of ancient and modern times."

1705. Attention to diet, both as to *quality* and *quantity*, is of the utmost importance in the treatment of disease, and quite as necessary as the administration of suitable medicines. Dr. Thomson, I regret to say, who has done so much as a reformer in the healing art, favors the idea that a patient should eat whether his food is likely to be digested or not; and it has fallen to my lot, in more than one instance, to notice the evil effects of this practice. In chronic diarrhœa, for example, I have known death to ensue, notwithstanding the most energetic treatment, merely because the patient was permitted to eat "whatever his appetite craved." I am further convinced, that a greater number of courses are sometimes administered than would be necessary, if the diet were properly regulated. Whatever relief a course may afford, the patient, if he overloads his stomach, or indulges in improper food, must expect a return of his symptoms; it then becomes necessary to repeat the course, and thus he goes on, until his patience is wearied, or he loses all confidence, perhaps, in the treatment. People must not always expect to be cured of lingering or obstinate complaints, without imposing some little restraint upon their appetites. Patients frequently call upon me from different parts of New England, who have taken repeated courses of medicine without having regained their health; but I have generally found that they were in the habit of over-taxing their digestive powers, and using tea, coffee, butter, fat meat, white bread, and other articles of food which are calculated to derange the stomach and

bowels. Where I have been successful in inducing them to live more abstemiously, however, and to pay attention to the *quantity* as well as the *quality* of their food, they have been restored to health without difficulty.

1706. It affords me pleasure to state, that I have succeeded in curing many cases of chronic disease by a regulated diet, together with cold bathing, without resorting to the use of medicine at all, excepting perhaps an occasional dose of composition, and spiced bitters. The patient should eat at regular hours, without indulging his appetite in the intervals, and avoid tea, coffee, and all oily or greasy substances. The plainer the food is cooked, the better. Mixtures, such as minced pies, are digested with difficulty, and produce unpleasant sensations in the stomach. The unbolted wheat bread (1181, *et seq.*) should be used instead of the white bread. A soft boiled egg, now and then, I have not found to be injurious. Lean meat, also, such as a tender beef steak, or a piece of roasted mutton, may be taken at dinner time, if the patient has been accustomed to animal food, and feels that it is indispensable to his wants. It should be eaten, however, without gravy, butter, or any thing of a greasy nature. With these exceptions, the patient should confine himself to a vegetable diet, such as peas, beans, turnips, potatoes, wheat, rye, barley, Indian corn, rice, tapioca, sago, ripe fruits, and so on, of the infinite variety of vegetable and farinaceous substances which have been furnished for our use by a wise and bountiful Creator. The fruits, I will add, should always be taken as a part of the meal. With regard to the bathing, cold water may be applied to the surface of the body by means of the shower, sponge, or hand bath, as the patient may deem the most appropriate. (1451, 1454, 1455.) If he cannot prevail upon himself to use the bath in any form—though I consider it of the utmost importance, provided it is followed by a warm glow of the skin—he should not fail to rub himself, every night and morning, from head to foot, with a coarse towel, or flesh brush.

1707. *Clothing.* But few remarks need be made upon this subject, for every person of intelligence knows that the dress should be regulated according to the season and climate. The grand object of the patient should be, to render himself warm and comfortable, avoiding both an excess and deficiency of clothing, for the first enfeebles the system, and the second does not afford adequate protection against a damp or cold atmosphere. Lord Bacon has observed, that a great store of clothes, either upon the bed or upon the back, relaxes the body. Flannels, or extra clothing of any description, should not be laid aside at too early a period in the spring; and in the autumn, as soon as the atmos-

phere becomes sensibly cooler, they should be resumed, for the patient is more liable to be attacked by chilliness, and other unfavorable symptoms, at that period, than in the depths of winter.

1708. With regard to the dress of females, a very great evil exists in the use of stays; and if ladies would reflect seriously upon the subject, they would forever cease to mar the symmetry and beauty of their persons by such a monstrous practice. We laugh at the Chinese women for cramping their feet in iron shoes, but how much more unnatural is it to cramp the waist in stays, and thereby interfere with the free action of the lungs. Many diseases are produced in this way, such as cancer, liver complaints, costiveness, nervous affections, palpitation of the heart, and consumption. It should be remembered that the blood undergoes important changes in the lungs, which adapt it to the various wants of the animal economy; it is deprived of its impurities, and receives a bright red color, which is communicated to it by the action of the air. (125.) But if the chest is contracted by corsets, only a limited portion of air is received into the lungs, and consequently, the blood is not sufficiently *vitalized* for the support of the system. Curious as the fact may seem, it is estimated that the lining membrane of the lungs is equal to a surface of about *twenty two thousand square inches;* and it is further estimated, that a healthy person inhales from six to eight hundred cubic inches of air in a minute. (124.) This quantity is greatly diminished, however, where the chest is bound in stays; and even the dress, as it is worn at the present day, serves to lessen the dimensions of the chest. A German physician ascertained that a young man, divested of his clothing, was capable of taking *ninety six cubic inches* of air into his lungs at one inspiration; but when his clothing was adjusted in the usual manner, the quantity at each inspiration was reduced to *fifty cubic inches.* I do not make these remarks with the expectation of rendering corsets and tight dresses unfashionable, but I earnestly beseech those who are laboring under disease, to throw them aside, for without this precaution, it may be impossible, in many instances, to effect a cure. It is not sufficient to dispense with the use of corsets, but the dress also, should be worn loosely around the waist. Buchan says, "A flowing dress, sustained by the shoulders, and gently compressed by a zone round the middle, with only as much tightness as is necessary to keep the clothes in contact with the body, ever was, and ever will be, the most healthy, comfortable, and truly elegant habit that females can wear, or fancy invent."

1709. *Exercise.* Exercise is necessary to invigorate the body, but in the case of an invalid, should neither be taken in the

damp, cold air, nor to the extent of producing fatigue. In lung complaints, breathing a cold atmosphere is very injurious, even though the body is adequately protected by clothing. The feet, in walking, should be kept warm and dry with thick soled boots or shoes. Exposure to the night air should be avoided, both in summer and winter, and the patient should be careful not to stand for any length of time on the cold ground or pavement. As we proceed into the air, says Dr. Johnson, while the body is warm, so we should, by a brisk pace, endeavor to keep up that degree of animal heat with which we set out, and that determination to the surface of the body, which is so effectual in preventing affections of any internal organ.

1710. Exercise quickens the circulation, exhilarates the mind, creates an appetite, and renovates the whole system. The illustrious Cyrus established it as a rule among the Persians, that they should always labor before eating. Cicero was slender and delicate until he travelled to Athens, where he became robust by gymnastic exercises. The eccentric Abernethy, who was so fond of prescribing the blue pill, says that air and exercise are the best remedies for nervous complaints. Dr. Cheyne thought the weak, studious, and contemplative, ought to make exercise a part of their religion. Lord Bacon said that he who wishes to live long, should change the position of his body at least every half hour. Cullen acknowledged that exercise and temperance were a certain remedy, in most instances, for the gout. Plato observed that he was a *cripple* who cultivated his mind alone, and suffered his body to languish through inactivity and sloth. Julius Cæsar, it is well known, was weak and slender until he became inured to the hardships of a military life. "A brisk circulation animates the whole man; whereas deficient exercise, or continued rest, weakens the circulation, relaxes the muscles, diminishes the vital heat, checks perspiration, injures digestion, sickens the whole frame, and thereby introduces numberless diseases."*

1711. Gymnastic exercises are highly serviceable to the invalid, but few have an opportunity of indulging in them, excepting the inhabitants of our principal cities. Instead of these, however, running, leaping, climbing a ladder, swinging by the arms, and the use of the dumb bells may be advantageously substituted. Riding in a carriage is useful to a weak patient, because it enables him to breathe the fresh air, but it does not call the different muscles of the body into action. Horseback riding is probably the best kind of exercise for an invalid, provided he is not too much debilitated. Sydenham remarks, "How desperate soever a consumption may,

* Sure Methods of Improving Health and Prolonging Life. London, 1827.

or is esteemed to be, yet I solemnly affirm, that horseback riding is the most effectual earthly remedy." Another distinguished writer says, "The beneficial effects of horseback riding, to those who are laboring under pulmonary consumption, are often truly astonishing. I have known invalids afflicted with this dreadful disease, who were too feeble to mount a horse without help, by riding a short distance the first time, and gradually increasing the length of the ride daily, become able, in the course of two weeks, to ride twenty miles without stopping by the way, and feel more vigorous at the end of the journey than the beginning; and I have known instances in which such individuals have made journies on horseback of several hundred miles, and returned to their homes and friends almost perfectly restored to health."*

1712. "The great cause why the Europeans appear ruddier and healthier than we do," says Mr. Dewey, the American traveller, is, that they exercise more, and live more in the open air. Parks in England are every thing. In Italy, France, and Germany, the people live much out of doors. Their coffee houses are in the open air. Families sit as much as possible in gardens, and public places. Their windows are all tenanted. Not only every city, but every town has its public park, adorned with trees; and every thing is done that can be done, to make it comfortable and refreshing, as well as fashionable. The sons of the first families in England, are often seen in Switzerland, with their packs upon their backs, walking amid the mountains, at the rate of forty miles a day."†

1713. "The English girls," says the same writer, "will walk five or six miles with ease. They are never afraid of the air. They do not reason as our girls do, that to be pretty and interesting! they must be livid, pale, and consumptive; and in order to be so, exclude themselves from the open air, from walks and parks—but they reason naturally, that health is beauty, and sickness is otherwise. English girls, it is said, are almost the only girls who climb up the sides of the Alps, or struggle ancle deep, up the ashes of Vesuvius."

1714. Exercise should be accompanied by a cheerful mind, or it will fail in producing the same beneficial effects. A story illustrative of this, is related by Dr. Sydenham. It appears that he had been consulted for a long time by a gentleman, who had received no benefit from his prescriptions. At length, the doctor told his patient, he could do no more for him, adding that there was a Dr. Robinson of Inverness, who was wonderfully skilled

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* Science of Human Life. † The Old World and the New.

in such complaints as his, to whom he offered him a letter of introduction, being confident that he would come back cured. The patient was a gentleman of fortune, and was soon able to begin his journey. When he arrived at Inverness, he found there was no physician of that name, nor ever had been within the memory of any person there. So the gentleman returned vowing every thing that was hostile to the peace of Sydenham; he was in a very ill humor, and told the doctor he thought he had used him very ill, to send him a journey of so many hundred miles for nothing. "Well," said the doctor, "are you better in health?" "Yes, I am well now, but no thanks to you," replied the patient. "No!" said Dr. S.; "but you may thank Dr. Robinson for curing you. I wanted to send you a journey with an object in view; I knew it would do you good; in going, you had Dr. Robinson in contemplation; and in returning, you were equally busied with the thoughts of scolding me."*

REPETITION OF COURSES.

1715. In *acute diseases*, such as dysentery, pleurisy, rheumatism, smallpox, and the various fevers and inflammations, it is proper to administer the courses in *rapid succession*, provided the violence of the symptoms cannot be subdued by the usual *intermediate treatment*. (1660, *et seq.*) It is thought by some that this will debilitate, but I am persuaded that a much greater degree of debility would ensue, by not making a prompt and decided impression upon the disease at the commencement. In scarlet fever, for example, which threatens to be obstinate, or severe, if we do not administer the courses in sufficiently rapid succession to keep the disease in check, sore throat is liable to supervene, and the patient's sufferings will not only be protracted, but there will be much greater difficulty in effecting a cure. In fevers and inflammations, where the skin becomes hot and dry, notwithstanding the intermediate treatment, I make it an invariable rule of practice to repeat the course without delay, even though it should be necessary to administer three courses in twenty four hours. Where the skin is moist, and of a natural temperature, however, a repetition of the course is not requisite.

1716. In *chronic diseases* it is improper to administer the courses in rapid succession, unless required by urgent or peculiar symptoms. As a general thing, a course once a week will be sufficient, provided strict attention is paid to the *intermediate treat-*

*London Practice of Midwifery, 4th edition. London, 1816.

ment. (1667, *et seq.*) We must be guided in this matter by circumstances. It may be necessary to administer two courses in a week, or it may be found that one course in a fortnight will suffice. While the patient is comfortable, and continues to improve in health, the course need not be repeated, but if the symptoms assume an unfavorable character, and cannot be subdued by the remedies usually employed in the intermediate treatment, a repetition of the course becomes indispensable.

1717. Mrs. F—— of West Cambridge, Mass., informed me that she was troubled many years since with an obstinate liver complaint, and placed herself under treatment at an infirmary in Boston, where fourteen courses of medicine were administered to her in as many days. At the end of that time, she was extremely debilitated, as might be naturally inferred, and the principal of the infirmary, who, I am bound to say, was unfit for the responsible station which he occupied, gave up her case as hopeless. She was taken home to her friends, with the expectation that she would soon die, but in this interval of rest, her digestive organs recovered their tone; she desired some light nourishment, which had the effect to revive her, and in a short time she was restored to perfect health.

1718. All that human agency can accomplish in the removal of disease, is, to cleanse the stomach and intestinal canal, invigorate the skin, remove obstructions, and restore a balance to the circulation; after that, time must be allowed for the digestion and assimilation of food, or more injury than good will ensue from a repetition of the courses. If the stomach is nauseated daily with lobelia, the digestive process is interrupted, and there is no opportunity for the formation of chyle, without which the blood will soon become impoverished, and incapable of nourishing or supporting the system.

1719. Those who take a brisk cathartic after a course, as is sometimes the practice, will find it necessary to repeat the latter at an earlier period than would be required under other circumstances. I will mention a case by way of illustration. A lady from a neighboring town, placed herself under treatment at an infirmary in Washington street, Boston, several years ago, and after taking several courses of medicine, was so far recovered as to be able to return home. Before her preparations for the journey were all completed, however, she was taken suddenly ill, and it was necessary to repeat the course. It was subsequently ascertained that a portion of mandrake had been given to her in a dose of spiced bitters, for the avowed purpose of retaining her at the infirmary, and increasing her expenses. I have only to add, that such imposition was deserving of the severest punishment.

1720. The appetite does not return, in some instances, until two or three days after a course, but that, of itself, unaccompanied by any urgent symptom, does not warrant an immediate repetition of the course. I will state, also, that in some cases, the patient has no relish for food until six or seven courses have been administered, but this I have generally attributed to improper aliment, such as butter, meat, oily substances, white bread, and rich gravies, including tea and coffee as beverages. I have found where these were dispensed with, and the patient confined to a wholesome vegetable diet, regulated according to the exigencies of the case, that the appetite would return in a much shorter time, and also be more regular and permanent.

NUMBER OF COURSES.

1721. The number of courses requisite to effect a cure, must necessarily depend upon the nature, or obstinacy of the disease, and the judgment with which the medicines are administered. A single course is generally sufficient to arrest a simple fever, while a severe attack of bilious, scarlet, or typhus fever, may require six or seven courses.

1722. In *chronic diseases*, from three to fifteen or twenty courses are usually required. We sometimes hear of patients having taken *fifty* or a *hundred*, but I presume so large a number would not have been required, if proper attention had been paid to the diet and intermediate treatment.

1723. Miss B—— of Lynn, Mass., took twenty seven courses for a malignant disease of the stomach, and was cured, notwithstanding she had been under treatment by the diplomatised physicians for seven years. She did not experience much relief until after the sixteenth course, when she was seized with a peculiar sensation in the stomach, which she compared to the "crawling of snakes or eels." After this, she began to improve, but the sensation continued, to a greater or less extent, until she had taken the twenty sixth course, when her health was fully and permanently restored. The courses were administered, at intervals, during a period of eighteen months. Dr. Patten was the attending physician.

1724. I knew a gentleman with dropsy, to whom a course was administered once a week for nine months, before a cure was accomplished, but he was sedentary in his habits, very fond of animal food, and was obliged, during the day, in consequence of his business, to breathe an impure air.

SYMPTOMS MARKING THE PROGRESS OF CURE IN CHRONIC CASES.

1725. A few remarks on this subject may not be unimportant, as symptoms occasionally arise which are calculated, in some instances, to excite the fears or distrust of the patient.

1726. *Pains.* These are not uncommon, and are experienced in various parts of the body, generally occurring after the administration of two or three courses. They are not usually of long duration, and shift from one part of the body to another. They are prone to arise, where the sensibility of the nerves has been impaired by narcotics, such as opium, digitalis, and prussic acid. As soon as the body is renovated, it becomes sensible, if I may so speak, of the disease which has been preying upon it, and painful sensations for a limited time are the necessary consequence.

1727. *Expectoration.* In consumption, and other diseases of the lungs, this is increased for a time, and then gradually disappears. Expectoration is a favorable symptom in a dry cough. It is nature's method of terminating the disease, as catarrh of the head is terminated by a discharge of mucus from the nose.

1728. *Debility.* Chronic diseases are accompanied with more or less irritation, which may be either local or general, according to the nature of the complaint, and as soon as this is subdued, the patient complains of debility, which may continue for a few days, or for several weeks. He is not to be discouraged, however, for the symptom is a favorable one, or rather, it must necessarily precede a restoration to health. While the system is laboring under a high degree of irritation, the brain is stimulated to increased action, and this produces a sort of fictitious strength, which disappears when the irritation is allayed. A patient in the delirium of fever, for example, may require two or three persons to confine him in bed, but as soon as the fever subsides, he often sinks into a state of exhaustion, and becomes entirely helpless.

1729. *Despondency.* This arises from causes similar to the above, and so much is the mind depressed, in some instances, that the patient fancies the medicines are of no avail, and that he cannot long survive. He often refuses to employ the necessary remedies, but should be encouraged to persevere, for in a week or two, the spirits will become more buoyant, and the health im-

proved. Despondency does not usually occur, excepting where the patient has been under a long course of treatment by the diplomatised physicians.

1730. *Ulcers in the Stomach and Bowels.* Chronic diseases sometimes terminate in the formation of little ulcers in the stomach and bowels, which are exceedingly painful, and accompanied in many instances with costiveness. In four or five days they discharge their contents into the stomach and intestinal canal, and the matter passes off by stool, after which the patient speedily recovers. The food, meanwhile, should be of a light and soothing nature, such as tapioca, sago, wheat jelly, and preparations of slippery elm. If the patient is costive, injections once or twice a day are indispensable.

1731. *Boils.* These occasionally make their appearance, and appear to be the result, in some instances, of that renovating process which is necessary to free the system from impurities.

1732. *False Membrane.* The discharge of this by stool, is a favorable symptom, and indicates a speedy return to health. It is a skinny substance, and usually passes from the bowels in shreds, or patches, but sometimes it assumes the tubular form, bearing a close resemblance to an intestine. (1393.) It lines the whole extent of the intestinal tube, as well as the stomach, and until it is detached, the patient cannot be restored to permanent health. (1402.) The quantity which is discharged, in some instances, is almost incredible. In the meantime the diet should be light, and easy of digestion, consisting of sago, tapioca, wheat jelly, or similar articles of a soothing nature. As soon as this membrane makes its appearance in the stools, the coat usually separates from the tongue, and leaves it clean, and of a natural appearance.

DISEASES AND THEIR TREATMENT, WITH SOME REMARKS ON DISLOCATIONS, FRACTURES, AND WOUNDS.

AGUE AND FEVER.

1733. The *cold stage* of this disease is preceded for a longer or shorter time by various symptoms of ill health, such as lassitude, yawning, cold hands and feet, indigestion, restlessness, pains in the back and limbs, and a peevish or irritable temper. The blood recedes from the surface, and leaves the skin pale, shrivelled, rough, and benumbed, and in some instances the body trembles or shakes so violently as to resemble convulsions. The breathing is short and laborious, accompanied by a feeling of tightness or oppression in the chest. The patient may continue in this state for a few minutes only, or for several hours; and as the chill goes off, the fever succeeds, accompanied with thirst, nausea, vomiting, a full and strong pulse, headach, and pains in the back and joints. This is termed the *hot stage*. At length perspiration ensues, which terminates the paroxysm. The mouth becomes moist, the heat of the skin abates, the respiration grows easy, and the pains in different parts of the body subside.

1734. The chills may return daily, every other day, or every third day, according to the peculiar type of the disease; but their recurrence usually takes place every second day. During the intervals, patients sometimes enjoy a tolerable share of health, but at others, they complain of languor, indigestion, loss of appetite, and a sensation of chilliness.

1735. Ague and fever is peculiar to marshy districts, and is the most prevalent when the days are warm, and the evenings and mornings damp and chilly. Those who disregard the laws of health, eating and drinking promiscuously whatever the appetite may crave, or the fancy dictate, or who indulge in excesses of any description, which weaken the body, or disorder the digestive functions, are generally the victims of its attacks.

1736. Treatment. During the cold stage, frequent doses of pepper sauce, composition, or cayenne and bayberry should be given, together with one or two stimulating injections, and if the patient is in bed, heated stones wrapped in damp cloths should be placed at his feet and sides. If the case is obstinate, this should be followed by a thorough course of medicine, using cayenne, bay-

berry, and scullcap freely, which will arrest the paroxysm, or greatly diminish its violence. If the skin is cold and shrivelled, it should be bathed with a mixture of vinegar and cayenne, (1531) while the patient is in the bath, as this will aid in recalling the blood to the surface of the body.

1737. In mild cases, the chill may be arrested by a free use of the stimulating tea, (1515) or if this is not sufficient, by the administration of a lobelia emetic. (1579, *et seq.*)

1738. When a course is given, it is well to follow it by an application of the stimulating liniment. (1306 *et seq.*)

1739. The treatment which is requisite in the cold stage, is equally beneficial in the hot, for the blood is determined to the internal organs in the first instance, and to the surface of the body in the second, and in both cases it is equally important to restore an equilibrium to the circulation.

1740. If the health is much impaired, it may be necessary to administer several courses of medicine, using spiced bitters several times a day in the intervals, together with an occasional dose of composition, or cayenne and bayberry.

1741. The lobelia pills (1298, *et seq.*) will be found useful as a part of the intermediate treatment.

1742. A heated stone wrapped in a damp cloth should be placed at the feet on retiring to bed.

1743. If the bowels are costive, an injection should be used once a day; but this will not be necessary, if the patient regulates his diet, avoiding the use of tea, coffee, fat meat, and butter, and eating the unbolted wheat bread instead of that made of superfine flour. He should also rub his skin, night and morning, with a coarse towel, or flesh brush. Alcoholic drinks should be particularly avoided, and the feet kept warm and dry.

1744. Dr. Louis Frank found black pepper a very useful remedy in the cure of ague and fever; (789) and in some parts of the State of New York, the people employ a tea of blue vervain with great success. (706.)

APOPLEXY.

1745. Apoplexy comes on in some cases with little or no warning, while in others it is ushered in by premonitory symptoms, such as headach, dizziness, ringing in the ears, bleeding from the nose, drowsiness, impaired vision, throbbing in the temples, partial deafness, difficulty of utterance, loss of memory, weakness of the lower limbs, chilliness, and sometimes nausea. An attack may

occur in a few hours after these symptoms have appeared, or not for many weeks, or even months.

1746. During the apoplectic fit the patient is wholly insensible; the breathing is slow, and generally loud or snoring; the mouth foams, and is occasionally drawn to one side; the face is sometimes red, or livid, and at others pale, ghastly, and bloated, with the eyes immovably fixed, or rolling about frightfully in their sockets. In some instances the lips are puffed out forcibly, and the saliva scattered in every direction. The extremities are always cold, and the bowels costive. The fit may subside in a few minutes, or if relief is not obtained, it may continue for several days. It is accompanied in some cases with convulsions, and in others with palsy, which may extend to the whole of one side, or to a more limited portion of the body.

1747. Deep intoxication is sometimes mistaken for apoplexy, but the former may be distinguished by the smell of the breath.

1748. Apoplexy generally occurs about the fiftieth year of age, and seldom much earlier than forty. It is induced by luxurious living, the use of spirituous liquors, severe study, late hours, venereal excesses, masturbation, and by whatever causes an undue determination of blood to the head. It is admitted that the free use of strong coffee is a frequent cause of the disease. It occurs more frequently just after a hearty meal, than at any other period. Individuals who are of a full habit, with a short neck, and large head, are said to be most liable to its attacks.

1749. Treatment. The first thing to be done in a case of apoplexy, is to loosen the garments, remove from the neck whatever may compress the veins, and elevate the head and shoulders. We should then endeavor to equalize the circulation, or in other words, to recal the blood from the head, where there is an excess, and distribute it to other parts, where there is a deficiency. Hence we must administer stimulating injections, containing a portion of the antispasmodic tincture, (1567, 1574) and at the same time pour some of the tincture (1266, *et seq.*) down the throat, which will be far more effectual than the use of the lancet. If the patient is in bed, a heated stone, or bottle of hot water, wrapped in a damp cloth should be placed at the feet, and the body and extremities rubbed briskly with vinegar and cayenne, (1531) or some other stimulating wash. Cloths wrung out of cold water should be applied to the head, and renewed as often as they become warm. As soon as the patient can swallow, cayenne and bayberry tea should be given, followed by an emetic of lobelia to cleanse the stomach. The application of external warmth to the body, must be gradual, commencing with a heated stone, as I have directed, and increas-

ing the number in proportion as there is an increase of vitality, until a free perspiration ensues, not forgetting the usual precaution of wetting the face and breast with cold water, if there is languor or faintness.

1750. The prejudice which formerly existed against the use of emetics in apoplexy, is now disappearing, and even the medical faculty are beginning to prescribe them without any apprehensions of evil. Lobelia inflata, however, is the only emetic which I would recommend. Antimony, sulphate of zinc, and other poisonous emetics of that description, would probably do more harm than good.

1751. After the patient is relieved, he should invigorate his system with the usual stimulants and tonics, and if necessary, take one or two courses of medicine.

1752. Persons who are predisposed to apoplexy, should be very careful with regard to their habits. They should rise early in the morning, bathe themselves with cold water, (1448, *et seq.*) exercise in the open air, take their meals at regular hours, live upon a plain, simple diet, preferring vegetable to animal food, and avoiding fat meat, butter, tea, coffee, and all similar articles of luxury, which, however agreeable to the palate, are known to disorder the digestive organs, (1705–6) and thereby injure the whole system.

ASIATIC CHOLERA.

1753. The Asiatic or spasmodic cholera first made its appearance in Hindostan in 1817, and spread slowly through Arabia, Persia, Russia, Poland, and Germany, arriving in England in 1831, and making its way into Canada and the United States the following year. It is sometimes very sudden in its attacks, the patient being immediately prostrated by copious, watery evacuations from the bowels. Usually, however, it is preceded for a few days or a week by languor, giddiness, pain and rumbling noise in the bowels, headach, diarrhœa, cramps of the fingers and toes, numbness of the limbs, and sometimes nausea, and vomiting. As soon as the disease is fairly established, the strength of the patient fails very rapidly, in consequence of the profuse alvine discharges, which resemble rice water. These are accompanied with giddiness, ringing in the ears, imperfect vision, violent vomiting, burning pain at the pit of the stomach, thirst, restlessness, and cramps or spasms of the legs and thighs, which sometimes extend to the whole body. The eyes are sunken, and the countenance pale and cadaverous. The skin becomes cold and clammy, loses its

elasticity, falls into wrinkles upon the hands and feet, and acquires a livid or bluish color. The breath is very cold, indicating in some instances, according to Professor Espy, a temperature of only 60 degrees. The liver is extremely torpid, so that no bile makes its appearance in the stools. The urine also is scanty, or dried up. The mind is rarely affected, and the patient continues to talk rationally until a short period before his death. In some cases, the vomiting and spasms do not occur.

1754. Cholera has generally proved most fatal in the neighborhood of low, marshy districts, and in the dirty streets and alleys of our towns and cities. The intemperate, whether in eating or drinking, but particularly the latter, and those living in damp, filthy hovels and cellars, have been most frequently numbered among its victims. Want of cleanliness, indigestible food, unripe fruits, and exposure to the cold or damp night air, are all exciting causes of the disease.

1755. Those who wish to avoid the cholera, should live temperately, take their meals at regular hours, dispense with those articles of food which tend to disorder the stomach and bowels, and use the cold bath every morning as soon as they are out of bed. (1448, *et seq.*)

1756. There is no disease, perhaps, in which the medical faculty have betrayed so gross an ignorance of the healing art as in cholera. It was a malady with which they were unacquainted, and this led them to institute a great number of experiments, some of which were of a barbarous and revolting character. I heard Professor Hayward state to his class, that he had injected three pints of a preparation of soda into the veins of a cholera patient at one time, and *three gallons* within the space of three hours; but he acknowledged that this treatment always proved fatal—or rather, that the patients invariably died.

1757. When the disease prevailed in Boston, the consulting physicians of the city, having been requested by the Mayor and Aldermen to prepare some instructions for the relief of persons attacked, until medical advice could be obtained, recommended *two hundred drops of laudanum to be taken in hot brandy and water in the course of an hour, and the application of a mustard poultice over the whole surface of the bowels.* A *purgative* was also to be administered. Such was the treatment to be pursued previous to the arrival of a physician, who, in the language of Dr. Drake, generally came in time to "order a coffin" for the unfortunate patient.

1758. Now it is apparent, to every person of reflection, that the *laudanum*, *brandy*, *mustard poultice*, and *purgative*, as recommended by the Boston physicians, would be sufficient, in many

instances, to destroy a person in health, and it need not excite our wonder, therefore, that these pernicious agents should have proved fatal to those who were suffering from an attack of cholera.

1759. Magendie, the French Physiologist, entertained a more rational view of the disease than his medical brethren generally, and was very successful in its treatment. He says, "The diminished energy of the circulation, and the blue and cold condition of the body, in individuals seized with the cholera, were prominent phenomena. On the arrival of a patient in my wards, he was placed in a thoroughly heated bed, his limbs rubbed with stimulating liniments, and bags of hot sand applied along the body; internally he was given hot drinks."*

1760. By this treatment, which was intended to re-establish the circulation, "through the artificial restoration of animal heat," Magendie frequently witnessed recovery of health.

1761. Treatment. To check the rice water discharges, restore warmth to the surface, and take off the determination of blood to the bowels, are important indications of cure in this distressing malady. Heated stones wrapped in damp cloths should be placed at the feet and sides, and pepper sauce, or a tea of cayenne and bayberry, (1512) containing a portion of scullcap, or lady's slipper, given freely, commencing with the dose of a table-spoonful, if the patient is much prostrated, and repeating it every five or ten minutes, as the case may seem to demand. The addition of slippery elm to this tea, so as to render it somewhat mucilaginous, has been found highly beneficial. Injections are of the utmost importance, and should be administered frequently, as they warm and invigorate the system, control the diarrhœa, and determine the blood to the surface. (1567, *et seq.*) If the patient is in a sinking or *collapsed* state, two or three tea-spoonfuls of the *antispasmodic tincture* may be added to each tea-cupful of the cayenne and bayberry tea, and if spasms are present, it should never be omitted. The body and extremities should be rubbed briskly with pepper sauce, tincture of cayenne, or some other stimulating wash, as this will have the effect to restore warmth and action to the skin.

1762. The vapor from the heated stones should be increased gradually, and in proportion as it can be borne by the patient, wetting his face and breast occasionally with cold water, if there are any manifestations of languor, or faintness.

1763. As soon as perspiration ensues, an emetic should be administered, followed by all the requisites of a course of medicine,

* Lectures on the Blood, *vide* Select Medical Library for 1839.

and if relief is not thereby afforded, the course may be repeated according to the circumstances of the case.

1764. When the more violent symptoms are subdued, the cholera sirup (1262, *et seq.*) may be usefully employed, and indeed it may be given with advantage throughout the whole course of the disease.

1765. During convalescence, spiced bitters should be taken freely to increase the tone of the digestive organs, together with a light, soothing, and nourishing diet, such as slippery elm and milk, (1431) wheat jelly, (1435) and preparations of sago, and tapioca. Cold water should be avoided until the health is fully restored, as it is liable to cause a relapse.

1766. The fleabane is considered an invaluable herb in the treatment of cholera, and as it abounds in almost every part of the United States, may be procured when other remedies are not at hand. (1103–4.)

1767. Pepper sauce (1141) has cured aggravated cases of cholera, without the aid of any other medicine. The captain of a western steamboat was attacked suddenly with the disease, during its prevalence in this country in 1832, and in half an hour was deathly cold, scarcely able to speak, and almost without pulsation at the wrist. Half a tumbler-ful of pepper sauce was administered, and repeated in a short time. The pulse soon became perceptible, the extremities manifested a glow of returning warmth, the haggard visage became placid and serene, and without further treatment the patient speedily recovered.*

ASTHMA.

1768. Asthma is characterized by difficulty of breathing, tightness across the breast, a short, dry cough, and a sense of approaching suffocation. These symptoms usually increase in violence during the night, and constitute what is termed an *asthmatic fit*. They often seize the patient after the first sleep, and he requires to be bolstered up in bed, or is compelled, perhaps, to assume erect position. His breathing is laborious, accompanied with a wheezing sound, and he feels as if he should die with all the horrors of suffocation. If he is of a full habit, his face becomes flushed and bloated, but otherwise, it is somewhat pale and shrunk.

1769. The difficulty of breathing subsides by degrees, and towards morning, there is usually an expectoration of thick phlegm, which affords the patient great relief. A similar attack occurs the

* Recorder, Nov. 3, 1832. Columbus, Ohio.

succeeding night, and thus the disease continues for one or two weeks, or perhaps for months.

1770. An attack of asthma is often preceded by drowsiness, flatulency, pain in the head, lowness of spirits, and a sluggish or costive state of the bowels.

1771. The feeling of suffocation which attends this complaint, is caused by some obstruction in the lungs, which precludes the free admission of air, but whether this is owing to a spasmodic contraction of the air passages of the lungs, or whether the mucous membrane lining these passages is swelled or thickened in consequence of inflammation, has not yet been fully ascertained.

1772. Among the causes of asthma, are, disorder of the digestive functions, a very dry, or very moist atmosphere, violent exercise, strong mental emotions, breathing poisonous vapors, checked perspiration, suppression of the menses, and excessive venereal indulgence.

1773. The wheezing sound which accompanies the breathing, frequently occurs among children, and in them is known by the name of *phthisic*.

1774. Treatment. No remedy affords such immediate relief in asthma, as lobelia. Patients laboring under the most violent paroxysms, are often enabled to breathe freely in a few minutes, by the use of this invaluable, and I may say, extraordinary medicine. One or two tea-spoonfuls of the tincture, either simple (1274, *et seq.*) or antispasmodic, (1266, *et seq.*) may be given alone, or in a tea of composition, and repeated every five or ten minutes until relief is obtained. An injection should be administered in the meantime, (1567, 1574) and a heated stone wrapped in a damp cloth placed at the feet.

1775. Lobelia should be employed in a sufficient quantity to operate as an emetic, for the paroxysm is generally preceded by an extremely disordered state of the stomach. The vomiting, moreover, through the action of the diaphragm, serves to expel the phlegm or mucus from the air passages of the lungs, (645) which is of great importance in relieving the embarrassed respiration.

1776. Where the symptoms are urgent, the best form of the lobelia is the *antispasmodic tincture*, but under other circumstances, I prefer the pulverized leaves, or seeds, administering them in a tea of composition, or of cayenne and bayberry.

1777. Patients who are fearful of an attack of the asthma, during the night, should take two or three lobelia pills (1298, *et seq.*) on going to bed, together with a dose of composition tea, and place a bottle of hot water wrapped in a damp cloth at their feet.

1778. During the day, the stimulating tea (1515) will be found of great service, as it keeps the skin moist, and relieves the cough, and difficulty of breathing. The patient must dress warmly, exercise in the open air, when it is prudent to do so, and pay particular attention to his diet. (1680, *et seq.*) If the health is much impaired, or the disease has been of long continuance, it will be necessary to take a few courses of medicine.

BLEEDING FROM THE LUNGS.

1779. Bleeding from the lungs commences, in some instances, without any warning, but in others it is ushered in by precursory symptoms, such as headach, difficulty of breathing, chilliness, lassitude, cough, flushing of the cheeks, palpitation of the heart, coldness of the extremities, and tightness across the breast. The blood is mostly of a bright red color, and sometimes frothy. Its discharge is accompanied by a saltish taste in the mouth, and a sense of impending suffocation. The quantity is seldom so great as to prove fatal at once. The blood may proceed from the mucous membrane which lines the windpipe, and air passages of the lungs, or from a vessel in the substance of these organs which has been cut off by the softening of tubercles, as happens occasionally in pulmonary consumption. In the latter instance, the discharge of blood is often copious, and requires active and energetic treatment to arrest its flow.

1780. Among the causes of hemorrhage from the lungs, are sudden changes of atmosphere, violent exercise, lifting heavy weights, blowing on wind instruments, irritating substances inhaled into the lungs, and suppression of the monthly evacuations.

1781. Sometimes a discharge of blood takes place from the gums, or back part of the mouth, which excites alarm, as it is supposed to proceed from the lungs, but instead of being florid, it is of a dark color, and does not excite coughing, or irritation in the throat. It is also small in quantity.

1782. TREATMENT. If the case is not urgent, a cure may be effected by giving freely of composition tea, and placing heated stones wrapped in damp cloths at the feet and sides of the patient, in bed. As soon as perspiration ensues, and the circulation becomes equalized, the hemorrhage will cease. If the case is obstinate, or the flow of blood considerable, a course of medicine should be administered, commencing with one or two stimulating injections, (1567, *et seq.*) and making free use of cayenne, and lobelia.

1783. The propriety of this treatment is questioned by the diplomatised physicians, but the tendency of it is, to restore a balance to the circulation, and thereby counteract the determination of blood to the lungs. This gives an opportunity for a coagulum to form around the ruptured or bleeding vessel, and the hemorrhage will then cease. (381.) The stimulants, injections, vapor bath, and emetic, all tend to recal the blood from the lungs, and to distribute it to other parts or organs where there is a deficiency, and surely there is nothing hazardous or unphilosophical in this mode of treatment. At all events, it affords prompt relief in all curable cases, and that too without the loss of blood by the lancet, which debilitates the system, and often ruins the constitution.

1784. After hemorrhage is checked, the patient should be kept in a gentle perspiration for several hours by the use of composition tea. He should then adopt the appropriate means of reinstating his health, such as living temperately, keeping his feet warm and dry, rubbing his skin night and morning with a coarse towel, or flesh brush, exercising in the open air, and making use of the ordinary stimulants and tonics according to the circumstances of the case. (1660, *et seq.*) Where the hemorrhage is symptomatic of consumption, the case demands very close attention, and no pains should be spared by the patient to invigorate his constitution, and restore his lungs to a sound and healthy condition.

BLEEDING FROM THE NOSE.

1785. Bleeding from the nose is most common in young people of a full habit, and is not attended with danger, excepting where the discharge is copious, or long continued. It is preceded, in many cases, by throbbing of the temples, giddiness, ringing in the ears, heat and itching in the nose, and other symptoms indicating a determination of blood to the head. It is produced by violent exercise, exposure to cold, and the suppression of any accustomed evacuation. When it occurs in putrid disorders, it is considered a dangerous symptom.

1786. Treatment. The treatment which was recommended in bleeding from the lungs, is equally applicable in this complaint. A free use of composition, or cayenne tea, so as to produce a perspiration, will often afford the desired relief. A stimulating injection, (1567, *et seq.*) and the immersion of the feet in warm water, will serve to recal the blood from the head, and restore an equilibrium to the circulation. In obstinate cases, it will be necessary to administer a course of medicine.

1787. The introduction of a piece of lint, or raw cotton, into the nostril, so as to compress the bleeding vessels, or the application of cold water to the back of the neck, or along the course of the spine, will arrest the flow of blood in some cases. At the same time, the patient should keep in an erect position. Reclining over a basin of water, to wash the nose, as is a common practice, increases rather than diminishes the hemorrhage.

1788. A gentleman in Philadelphia applied to me for advice, who had been subject to bleeding from the nose for several months. I advised him to take half a tea-spoonful of cayenne three times a day, with his food, which, in the course of a week, relieved him of his malady.

BLEEDING FROM THE STOMACH.

1789. Vomiting of blood, as this disease is termed, is mostly preceded by chilliness, nausea, and a sense of weight and pain in the region of the stomach. The breath is offensive, and the hands and feet cold. The blood is thick or clotted, of a dark color, mixed with the contents of the stomach, and generally copious. These signs distinguish it from blood which comes from the lungs. (1779.) If not discharged by vomiting, it passes off by the bowels, and renders the stools black and offensive.

1790. This disease may be occasioned by a blow, by the introduction of a corrosive poison into the stomach, or by any substance which is capable of exciting inflammation. It arises sometimes in the last stage of putrid fevers, the matter vomited resembling coffee grounds; and is common to young females who are irregular in their menstrual discharges. It is seldom so profuse, says a medical writer, as to destroy the patient suddenly, and the principal danger seems to arise, either from the great debility which repeated attacks of the complaint induce, or from the lodgment of blood in the intestines, which, by becoming putrid, might occasion some other disagreeable disorder.

1791. Treatment. The principles of treatment in this disease are the same as in hemorrhage from the lungs. The circulation should be equalized, which may be accomplished in mild cases by the use of cayenne and bayberry tea, but if the symptoms are urgent, it will be necessary to administer a course of medicine. The emetic, which constitutes a part of the course, is important to evacuate the blood which has accumulated in the stomach. During convalescence, the patient should confine himself to food

of a bland or soothing nature, such as wheat jelly, or preparations of sago, tapioca, or slippery elm. Spiced bitters should be taken occasionally to strengthen the digestive organs, and advantage will be derived by using a tea of evan root, black birch, raspberry, or any of the mild astringents. If the bowels are costive, an injection should be administered once or twice a day, particularly if the stools are dark or offensive.

BLEEDING FROM THE URINARY ORGANS.

1792. This may be caused by external violence; the irritation of a stone in the bladder, or kidney; lifting heavy weights; severe exercise; or the internal use of cantharides. In some instances the quantity of blood discharged is so great as to produce alarming debility. If the blood is pure, we infer that it is from the urethra, but if in flakes, or intimately mixed with the urine, we conclude that it is from the bladder, or kidney. When it proceeds from the latter, it is attended by pain or uneasiness in the back, but if it comes from the bladder, pain is experienced in the lower part of the abdomen, accompanied with a frequent desire to pass water.

1793. TREATMENT. If the bleeding is copious, or if it has resulted from external injury, a course of medicine should be administered, as this will not only check the hemorrhage, but prevent the development of inflammation. If the discharge of blood is moderate, a cure may be effected by drinking freely of a tea of black birch, purple archangel, cocash, beth root, or composition. An injection into the rectum, night and morning, will have a beneficial influence upon the urinary organs. If a stone is lodged in the kidney, ureter, or bladder, the diuretic tea (1516) should be employed, rendering it mucilaginous by the addition of slippery elm. Any of the diuretic articles may be used to advantage. If these do not afford relief, and the pain, or irritation is severe, the vapor bath, together with a lobelia emetic, should be administered. (638.)

BILIOUS OR REMITTENT FEVER.

1794. This disease is very common during the summer and autumn in the Middle and Southern States, prevailing more particularly in hot weather, and in low and marshy districts. It

commences with languor, drowsiness, bitter taste in the mouth, pains in the head, back, and extremities, followed by chills and heats, fever, thirst, nausea, and oftentimes a vomiting of bilious matter. The eyes, skin, and urine, from the wide diffusion of bile through the system, become of a yellow color. The bowels are generally costive. The tongue is dry, and covered with a white, or brown coat. The breathing is oppressed, and a sense of weight or fulness, is experienced in the right side, and in the region of the stomach. Delirium is sometimes present. The abdomen often becomes distended with wind, and sore or tender on pressure. The stools are sometimes watery and reddish, and at others black and offensive, somewhat resembling tar.

1795. There is a remission of the febrile symptoms in the morning or forenoon of each day, which lasts for an hour or two, when the fever returns with its previous violence, and hence the term *remittent fever*.

1796. In hot and sickly climates, bilious fever is prone to assume the *congestive* or *malignant* form, which runs its course in a short time, unless checked by efficient remedies. Among its characteristic symptoms are, great prostration; restlessness; intolerable thirst; violent pains in the head, back, and lower extremities; red and watery eyes; brown, or black tongue; laborious breathing; constant retching, or vomiting; great oppression in the region of the stomach; swelled and purple lips; extreme yellowness of the skin; offensive stools; swelling and soreness of the abdomen; and frequent, or constant delirium. As death approaches, purple spots appear on the skin, and bleeding frequently takes place from the mouth, nose, and other free passages.

1797. Bilious fever is caused by intemperance in eating and drinking, irritating substances in the bowels, and exposure in hot climates, or marshy districts, to the night air. I am convinced that the use of butter, and all animal fats, from the fact that they are not digested without recalling the bile into the stomach, is a frequent cause of the disease. (1689.)

1798. Treatment. From the symptoms in bilious fever, it will be seen that the liver, stomach, and bowels are prominently affected, and this will at once suggest the necessity of thorough courses of medicine, to restore these organs to a healthy condition. At the commencement of a course, one or two injections should be administered to evacuate the bowels, and as long as the stools continue offensive, or unnatural, they may be used several times a day.

1799. In the congestive form of the disease, in which the patient is rapidly sinking, a tea of cayenne, bayberry, and scullcap,

prepared by steeping a tea-spoonful each of these powders, in a pint of boiling water, should be given in the dose of a table-spoonful, and repeated every five, ten, or fifteen minutes, and as soon as the patient revives, and the skin becomes moist, a light course of medicine should be administered. (1612.)

1800. If the abdomen is swelled, or tender on pressure, it should be bathed with pepper sauce, rheumatic drops, or tincture of cayenne, and if this does not afford relief, a flannel moistened with either of these liquids may be laid over the abdomen, or instead of this, a poultice of wheat bran, or Indian meal, adding cayenne to give it the necessary degree of pungency, may be applied.

1801. After the course is administered, it is very important to keep the patient in a gentle perspiration, or the fever will return in all its violence. The stimulating tea (1515) will be found excellent for this purpose, and if necessary the quantity of cayenne may be increased. It may be given in table-spoonful doses every ten or fifteen minutes, or a tea-cupful every hour, according to the circumstances of the case. A heated stone wrapped in a damp cloth should be placed at the feet, and an injection, if necessary, administered every hour. If, notwithstanding this treatment, the skin becomes hot and dry, and other unfavorable symptoms return, it will be necessary to repeat the course without delay.

1802. The scullcap, which is a component part of the stimulating tea, is of great service in allaying the irritability of the nervous system, which may arise in this complaint, and if it cannot be obtained, the lady's slipper should be substituted.

1803. If the skin becomes hot or feverish between the courses, it may be sponged with cold water, which is grateful to the patient, and often affords surprising relief. (1660.)

1804. From the irritable condition of the stomach and bowels, solid food should be avoided, and the strength of the patient sustained by nourishing fluids, such as weak milk porridge, wine whey, and slippery elm tea. As soon as the fever is entirely subdued, the restorative medicines are to be freely used. During convalescence, the unbolted wheat bread, or wheat jelly, should constitute an article of diet, as this will regulate the bowels. The patient must be very cautious not to overload the stomach, or expose himself to damp cold air, or he may suffer a relapse.

BOILS.

1805. These are hard, red, painful tumors, which appear on various parts of the body, and in a few days or a week, discharge a quantity of matter, together with a yellow core. In some instances, they continue to appear, one after another, for several weeks, or even months. Many people suppose that they are an evidence of health, but this is an erroneous opinion, for they do not occur excepting in a disordered state of the general system.

1806. TREATMENT. A poultice of slippery elm and ginger, adding half a tea-spoonful or more of cayenne, (1543) should be applied, and renewed two or three times a day until the matter is entirely discharged, after which the healing salve may be used. The cayenne should not be omitted, as it diminishes the pain and soreness of the boil. Where it is inconvenient to use a bandage, the poultice may be confined to the affected part by means of the adhesive plaster, (1320) melting it in the flame of a candle, in the same manner as sealing wax, and touching it to the corners of the cloth upon which the poultice is spread. Immediately before the application is made, the plaster should be warmed before the fire, so that it will adhere firmly to the skin.

1807. Boils are sometimes so painful and irritable as to affect the general health, and in that case a free use should be made of composition and spiced bitters, to warm and invigorate the system. The tea mentioned in paragraph 1518, will be found highly beneficial. If the bowels are costive, an injection should be administered at least once a day. The patient should regulate his diet, and avoid the use of tea, coffee, fat meat, and butter; for without this precaution, he will find it difficult, oftentimes, to effect a cure. See remarks on *diet.* (1680, *et seq.*) In some cases it is necessary to administer a course of medicine.

1808. Boils may be readily dispersed in the forming stage by keeping them constantly wet with rheumatic drops. This is best accomplished by the application of a piece of folded linen, or cotton cloth, confining it with a bandage, or by means of the adhesive plaster, as mentioned above, and moistening it with the drops as often as it becomes dry. In the meantime the warming and restorative medicines should be taken internally. Two or three days are sometimes required to effect the desired object.

1809. *Carbuncles* are a species of boil, and require to be treated in the same manner. They are larger in circumference than boils, but seldom rise above the level of the skin. They are of a livid or purple color, containing a black core, and sometimes

surmounted by little vesicles or blisters. They mostly occur in persons of feeble health, and affect the general system to a greater extent than boils. They are common in warm climates, and often attend the plague.

BRUISE.

1810. An injury from a blow, or fall, is termed a bruise, and the dark or purple color which the part assumes, is owing to the escape of blood from the minute or capillary vessels into the surrounding tissues.

1811. TREATMENT. The part may be bathed with rheumatic drops, tincture of myrrh, volatile liniment, or vinegar and cayenne; (1531) or an application may be made of chamomile, wormwood, tansy, or featherfew, in the form of a poultice, bruising the herb and simmering it a few minutes in vinegar, or saturating it with rheumatic drops. This will allay the pain, reduce the swelling, and frequently prevent discoloration. If there is much heat or inflammation, the poultice should be wetted frequently with cold water, or the injured part may be wrapped in cloths, and cold water poured on these. Composition, or cayenne and bayberry should be taken in the meantime, if the case requires it, to keep up a gentle perspiration, and if the stomach is disordered, it should be cleansed with an emetic of lobelia. Should the injury be severe, it may be necessary to administer a course of medicine.

BURNS AND SCALDS.

1812. These are not attended with any particular danger, if properly managed, unless they are situated on the trunk of the body, and embrace a considerable extent of surface; for then a portion of the perspirable matter which should pass off through the pores, is retained in the circulation, and sooner or later disorders the whole system. By administering courses of medicine, however, and paying strict attention to the *intermediate treatment*, so as to keep the skin moist, and maintain the equilibrium of the circulation, a cure may be effected even in very critical cases.

1813. If the skin remains entire, a cloth or towel, several times folded, should be immediately applied to the part, and wetted frequently with cold water until the pain ceases, giving composition or cayenne internally to keep up a perspiration. If this

treatment is adopted in season, it will prevent blistering, and effect a cure with but little suffering to the patient.

1814. The principle upon which cold water produces such beneficial effects in burns and scalds, has been admirably explained by Magendie, whose words I will quote. "If you apply a burning liquid to your hand," he says, "it reddens; more blood than is natural flows into it, and *irritation* ensues; but if you plunge your hand into ice-cold water, the quantity of blood rushing to it is diminished; the redness decreases in proportion, and you arrest *inflammation* at the onset."

1815. If a blister forms, it is advised by surgeons not to open it, but to allow the serum or water to remain until a new cuticle is produced, and then the escape of the serum will not be followed by any bad consequences.

1816. Where the skin is destroyed, a poultice of slippery elm should be applied, wetting it with cold water, whenever the part becomes painful or irritable; and at each renewal of the poultice, the sore should be washed with soapsuds, followed by some mild astringent tea, such as pond lily, witch hazel, or sumach. A still better application than the elm poultice, however, and one which I can confidently recommend, is a mixture of fir balsam and sweet oil, (1529) which generally effects a speedy and effectual cure.

1817. The raw surfaces of parts, as the fingers and toes, which have been scalded, or burned, should not be suffered to remain in contact, or they will adhere firmly together.

1818. The effect on the skin of an intensely cold body, as frozen mercury, for example, is the same as that of a hot, or scalding substance. The part reddens, becomes very painful, and at length blisters. Hence the same plan of treatment is required in both cases. It is well known that if a frozen limb be exposed suddenly to a warm atmosphere, it will mortify, but this difficulty may be obviated, where the vitality of the part is not entirely destroyed, by wrapping it in cloths, and wetting it frequently with cold water, as has been directed for scalds and burns.

CANCER.

1819. Cancer is a highly malignant disease, and attacks the various structures of the body, but is usually situated in a gland. In some cases it destroys or eats through important blood-vessels, and endangers the life of the patient by hemorrhage. It is pro-

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* Lectures on the Blood, *vide* Select Medical Library for 1839.

duced by various causes, such as the use of mineral and vegetable poisons, impure water, unwholesome food, and whatever deranges the health, or interferes with the circulation of the blood in the capillary vessels. Chewing tobacco, it is said, has developed it in the tongue. It is one of the deplorable consequences of vaccination, as I have observed in several instances. In the female breasts, there is every reason to believe that it is frequently occasioned by the pressure of stays or corsets.

1820. "The disease is not always situated in a gland," says a writer on surgery; "it often attacks structures which cannot be called glandular; and hard glandular swellings are often seen which do not partake of the nature of cancer."

1821. It is sometimes difficult to determine whether a tumor is cancerous, but among the signs by which it is characterized, are hardness or induration, shooting or darting pains, which return at irregular periods, and a puckering and discoloration of the skin by which it is covered. The superficial veins are generally enlarged. The tumor has a knotted or uneven surface, and attaches itself to the skin above and to the muscles beneath, converting the parts into a solid mass. In the female breast, there is a receding of the nipple, which is one of the acknowledged signs of cancer.

1822. The diseased skin covering the tumor generally ulcerates before the swelling has attained any considerable size,* and a sore is produced which discharges a dark colored and highly offensive matter. This discharge is so acrid as to corrode or inflame the parts with which it comes in contact. "The sore or ulcer becomes irregular in its figure, and unequal on its surface. The edges are thick, hard, and extremely painful, often exhibiting a ragged or serrated appearance. The ulcer sometimes spreads with rapidity to a great extent, and its progress produces frequent hemorrhages, which, joined with the irritation of the disease, reduce the patient to the lowest state of debility. Granulations generally grow on the ulcerated surface, when the ravages of the disorder seem to be suspended; but this apparent attempt at reparation only ends in the formation of an inveterate fungous substance."*

1823. Cancer rarely occurs in the female breast previous to the age of twenty eight, or thirty, and is liable to make its appearance when the monthly evacuations cease, unless particular attention is paid to the health.

1824. The course which physicians and surgeons pursue in the treatment of cancer, is not only inconsistent, but cruel and barbarous. The knife is their only remedy, and they advise their

* Practice of Surgery, by Samuel Cooper.

patients to submit to an operation, notwithstanding they admit that the disease is *constitutional*, and almost sure to return after the operation has been performed. Dr. Jackson of Boston, in his lectures on morbid anatomy, said, "After a cancer has been operated upon, the disease often returns in a short time with still greater malignity, and attacks other organs and parts of the body."

1825. A writer in a foreign medical periodical, in some remarks on cancer, says, "Extirpation of the breast was performed three times, and under circumstances apparently very favorable; but in all the disease returned. Of ninety eight amputations of the breast, two ended fatally from exhaustion during the healing of the wound; and in all the rest, with the exception of thirteen, the disease returned after the wound was healed, and terminated in death."

1826. With regard to the *thirteen*, just mentioned, the writer says he is morally convinced, that in several of the cases, an error of opinion or diagnosis was committed, and breasts were removed that were merely affected with scrofulous tumors, or some other innocent change of structure.

1827. "The above results," continues the writer, "are worthy of serious attention, and serve unfortunately to confirm the opinion advanced by many surgeons, that in most cases cancer is a *constitutional* and not a *local* disease."*

1828. Dr. Gibson, Professor of Surgery in the University of Pennsylvania, said, in one of his introductory lectures, "What medical man, from any country, would visit London without seeing William Lawrence, well known to the whole world as an anatomist and surgeon. Amidst a crowd of admiring pupils, in the large and numerous wards of St. Bartholomew's hospital, I saw him closely question each patient's symptoms, prescribe very carefully, and take deep interest in each. There were several long standing cancerous breasts, (one of eleven years) for which most gentle palliatives only were employed. He had 'long known that many such breasts, if let alone, would not prove fatal for a long time; but if they were extirpated, the disease would return speedily, and with immense suffering.'"†

1829. Patients are not only injured, or destroyed, by the surgeon's knife, but also by external applications of a poisonous nature, such for example as arsenic. Dr. Thatcher, in his Dispensatory, says, "Arsenic has long been known to be the basis of the celebrated cancer powder. It has been sprinkled in substance on the ulcer; but this mode of using it is excessively painful, and

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* American Journal of Medical Sciences.

† Boston Medical and Surgical Journal, vol. xxi. p. 278.

extremely dangerous; fatal effects have been produced from its absorption. This fact I have known in several instances, where Davidson's agents, and others, have attempted to draw out cancers, when the patient would absorb enough of the poison to affect the lungs, and cause him to die of consumption in the course of a year."

1830. TREATMENT. Cancer being a constitutional disease, it is impossible to cure it without adopting means to restore the general health. Courses of medicine are indispensable, therefore, and these should be repeated according to the nature or urgency of the symptoms, until the difficulty is removed.

1831. If a tumor is discovered which is thought to be cancerous, an effort should be made to disperse it, and for this purpose a plaster composed of meadow fern ointment, and a portion of pulverized cayenne and lobelia, may be applied, and constantly worn, or a poultice prepared as follows, may be used with still greater prospect of advantage. Take of Indian meal four parts, cayenne one part, green, or brown lobelia one part; make into a poultice with equal parts of rheumatic drops and water, and renew the application as often as it becomes dry. The quantity of cayenne may be increased or diminished, according to discretion, but enough should be used to produce a sensible degree of pungency. These applications promote absorption, and have been successful, in the course of a few weeks, in removing cancerous tumors of considerable magnitude. They may be confined to the affected part by means of the adhesive plaster, as recommended under the head of boils. (1806.)

1832. In addition to the above treatment, a course of medicine should be administered once a week, or once a fortnight, and strict attention paid to the diet, and *intermediate treatment*. The patient should confine himself as much as possible to vegetable food, eating temperately, and at regular hours, and avoiding fat meat, butter, tea, coffee, white bread, and every thing which tends in the remotest degree to disorder the digestive functions. (1680, *et seq.*) A medical writer says, "The patient should live abstemiously, avoiding animal food, wines, spirits, and fermented liquors, as heating, stimulating, and tending to increase pain; a milk and vegetable diet is the most proper in such cases." Dr. Lambe of London, who has quoted this passage in one of his works, has been successful in curing cancer by a rigid attention to diet alone, renouncing animal food of every description. He attaches great importance, also, to the use of *distilled water*, which he considers indispensable in his mode of treatment. For illustration, he says, "In the spring of 1810, I saw Mrs. M——, the

wife of a tradesman, living near Westminster bridge, laboring under a large ulcerated cancer, with the breathing much oppressed, as is usual in the last stages of the disease. This woman had lived almost entirely upon vegetable diet during her whole life. She had an aversion to animal food. She would take a little fish sometimes, but very rarely. Her own account was to the following purport. 'When I lived in the country, I was very healthy; but as soon as I began to drink the Thames water my health began to fail, and I have not been in good health since.'"* I have no doubt that water, loaded as it is with impurities, particularly in our principal cities, is a fruitful source of disease, and in treatment of cancer, I am disposed to agree with Dr. Lambe, that it would be better, if possible, to use that which has been purified by distillation.

1833. Besides attention to diet, the patient should exercise freely in the open air, and use the shower, sponge, or hand bath every morning, as soon as he is out of bed. (1451, *et seq.*)

1834. If the cancer has proceeded to ulceration, the cancer plaster (1321, *et seq.*) should be applied, and the sore washed every night and morning with soapsuds, followed by a tea of bayberry, pond lily, or any of the astringent articles, to render it perfectly clean. The rheumatic drops diluted with water, make a very excellent wash. The unpleasant or offensive smell may be easily corrected by a few applications of the yeast, or charcoal poultice. (1548, 1549.) When the hard or indurated parts have been removed, poultices of slippery elm may be used, adding ginger to them, if it can be borne, and when the sore is sufficiently cleansed, it may be dressed with the healing salve. During the administration of a course of medicine, also, an elm poultice should be applied to absorb any matter which may be discharged, or it will inflame or excoriate the neighboring parts.

1835. When the skin which covers a cancer is puckered and discolored, and it is deemed advisable to promote a discharge from the tumor, the *vegetable caustic* may be used as directed under that head, (1827, *et seq.*) and followed by the routine of treatment already recommended for a cancer in a state of ulceration.

CHICKENPOX.

1836. This disease appears to be nothing more than smallpox in a modified form. It rarely occurs more than once in the same

* Reports on Regimen in Chronic Diseases, p. 406. London, 1815.

individual. Persons who have been vaccinated are said, by medical writers, to be more liable to it than those who have escaped the *vaccine poison*. It commences with chilliness, sickness, headach, pains in the back and extremities, and more or less fever, followed by small pimples on various parts of the body, which show themselves first about the breast and face, and gradually proceed downward to the feet. They are filled with a whitish fluid, which gradually changes to a straw color; and in three or four days, they begin to dry up, leaving small, brown scales. The precursory symptoms of chickenpox are sometimes so slight as not to attract attention. When the pimples are large and round, the disease is distinguished by the name of *swinepox*.

1837. TREATMENT. If the case is mild, nothing further will be required than attention to diet, and an occasional dose of composition, to keep the skin moist. The patient should not be exposed to the cold, and if the bowels are costive, an injection should be administered once a day. The stimulating tea (1515) may be advantageously used in this complaint. If the skin should become hot and dry, and other unfavorable symptoms arise, an emetic should be given, or if necessary, a thorough course of medicine. The treatment pursued in measles, is equally applicable in chickenpox.

CHILBLAINS.

1838. These are painful swellings of a red, or bluish color, and attended with intolerable itching. They appear on the hands, feet, nose, ears, and lips, in cold weather, and are sometimes produced by going to the fire when the body is chilled. They are most common in those of a weak, or cold habit. If neglected, they may be followed by tedious ulcers.

1839. TREATMENT. When chilblains first appear, they should be bathed with rheumatic drops, or some other stimulating wash, followed by an application of fern ointment, healing salve, the stimulating liniment, or a mixture of fir balsam and sweet oil, (1529) to shield them from the air. The liniment, and fir balsam are particularly useful. In case of ulcers, the elm and ginger poultice should be used, and the affected part washed occasionally with a warm tea of bayberry, or sumach berries.

CHOLERA MORBUS.

1840. Cholera morbus, which is another name for vomiting and purging, is a disease peculiar to the summer and autumn, arising from the use of unripe fruits, indigestible food, a neglected state of the bowels, copious draughts of cold water, and a sudden change from a warm to a cold atmosphere. It comes on with but little warning, and is extremely rapid in its progress. It commences with nausea, oppression in the region of the stomach, griping pains in the bowels, followed by copious vomiting and purging, and a great degree of prostration. The discharges by stool are mostly thin and watery. In severe attacks, the extremities become cold, accompanied with great thirst, and violent cramps of the legs, and muscles of the abdomen. Death takes place, not unfrequently, in twenty four hours, and sometimes at a much earlier period.

1841. TREATMENT. This disease being extremely rapid in its course, we must resort at once to vigorous and active treatment, endeavoring to recal the blood from the internal organs to the surface of the body, and thereby establish an equilibrium of the circulation. Cayenne and bayberry tea should be given freely, together with one or two injections, (1567, *et seq.*) placing a heated stone wrapped in a damp cloth at the feet. This should be followed by the vapor bath and an emetic, or in other words, a thorough course of medicine, which will not fail to give relief. The vomiting and purging being checked, a gentle perspiration should be continued for several hours, and the digestive organs strengthened by the use of poplar bark, or spiced bitters, with a dose now and then of cayenne and bayberry. The cholera sirup may be taken to advantage several times a day. The patient must avoid the use of solid food, while there is any soreness or debility of the stomach and bowels, and confine himself to liquid nourishment, such as oatmeal gruel, (1425) slippery elm and milk, (1431) and soothing preparations of a similar kind.

1842. I have known a free use of cayenne and bayberry tea alone to cure severe cases of cholera morbus. An infusion of black pepper, prepared by steeping a tea-spoonful of the powder in a tea-cupful of boiling water, will often arrest the vomiting, and check the diarrhœa. The dose may be repeated every half hour, or hour.

1843. The cramps of the legs and abdomen may be relieved by rubbing the affected parts with pepper sauce, rheumatic drops, or a mixture of cayenne and vinegar. (1531.)

COLIC.

1844. This disease commences with an accumulation of wind in the bowels, attended with a griping or twisting pain, which is most severe in the region of the navel. Costiveness is generally present. The pain comes on in paroxysms, followed by transient intervals of rest. Strong pressure on the abdomen affords more or less relief, which distinguishes the disease from inflammation of the bowels. Wind is sometimes forced up from the stomach in considerable quantities, and is followed by a momentary cessation of pain.

1845. When these symptoms are attended by a vomiting of bilious matter, headach, bitter taste in the mouth, and yellowness of the eyes and skin, the disease is called *bilious colic.*

1846. Colic is usually occasioned by improper food, or excess in eating and drinking, and if the digestive organs are in a weak or irritable state, it is frequently excited by very trivial causes.

1847. The dry bellyach or painter's colic, as it is termed, is another form of the disease, which is peculiar to those who work among lead, as house painters, glaziers, and potters. Persons employed in lead mines, and white lead manufactories, are extremely liable to its attacks. It was at one time prevalent in England, in consequence of drinking wine and cider into which a preparation of lead had been put to give it a sweet taste. It comes on more gradually than the other forms of colic, and is attended with severe and constant pain about the navel, which sometimes extends to the arms, legs, and other parts of the body. The abdomen is hard to the touch, and somewhat tender, accompanied frequently with severe vomiting.

1848. Treatment. Medicines should be given to produce a perspiration, such as composition, cayenne, or ginger, and as soon as the skin becomes moist, the pains which characterize the disease will generally subside. Stimulating injections are of great importance, particularly in painter's colic, and may be frequently repeated. The vapor bath should be administered, or instead of this, heated stones wrapped in damp cloths may be placed at the feet and sides, in bed. Flannels wrung out of warm pepper sauce, or vinegar and cayenne, (1531) and laid upon the abdomen, will be serviceable in allaying the pain in the bowels. The use of nervines is indicated in this complaint, and hence the stimulating tea, (1515) containing, as it does, a portion of scullcap, may be employed with great advantage. If the stomach is much disordered, or the case severe or obstinate, either an emetic or a full course of medicine should be administered.

CONSUMPTION.

1849. Pulmonary consumption is one of the most fatal diseases known, and has been very aptly termed the *opprobrium* of the medical faculty. In Europe it carries off one fourth of the inhabitants, and appears to be equally, if not still more fatal in the United States. Andral, in a paper which he read before the French Academy of Science, furnished the following statistics with regard to the ravages of the disease in different parts of Europe.

Of 1000 deaths at Stockholm, 63 were by consumption.
" " Petersburgh, nearly the same number.
" " Vienna, 115.
" " Munich, nearly the same number.
" " Berlin, 150.
" " London, 236—Dr. Crichton.
" " Paris, nearly the same number.

1850. Dr. Crichton, in his work on consumption, remarks, that the disease is much more prevalent in Great Britain than in Russia; and within the temperate, than in the higher latitudes. In London and Paris, it destroys nearly a fourth of the population. There are particular places within the temperate latitudes of Europe more subject to it than others, owing, it is supposed, to the cold winds from the Alps and Appenines.

Of 1000 deaths at Marseilles, 250 were by consumption.
" " Genoa, 167
" " Naples, 125
" " Rome, 100
" " Pisa, 100

1851. In New York, the average deaths by consumption is 243 in 1000, which is nearly one fourth. The city inspector, in his annual report to the corporation for 1839, says a writer in the New York American, states the whole number of interments to be 7953, of which 1315 died of consumption, 460 of inflammation of the lungs, 36 of inflammation of the chest, 28 of bleeding from the lungs, 28 of congestion of the lungs, and 72 of bronchitis—total 1939. We perceive, therefore, that 243 in 1000 died of consumption, or of some other disease of the lungs.

1852. "Throughout the Eastern States, the mortality is probably greater than in New York—while in Lower Canada,

where the winters are as cold as those of Stockholm and St. Petersburgh, but very dry, and subject to trifling variations, the disease is much less frequent than with us. The country bordering upon our great lakes, is not so subject to pulmonary affections as that upon our seaboard; the native inhabitants are much less liable to it than we are, and it has been observed that soldiers sent hence to our garrison, in the vicinity of the lakes, often recover from incipient consumption. The temperature of the Island of Michilimacinac, from the 15th of June to the 15th of August, is almost invariable, and the climate, during this brief period of summer, is one of the finest in the United States."

1853. Women, it has been ascertained, are more frequently the victims of consumption than men. An English writer attributes this partly to the in-door life which they lead, and partly to their habit of wearing corsets, which prevents the full expansion of the chest. "In both ways," he says, "they are deprived of free draughts of vital air, and the altered blood deposites tuberculous matter in the lungs. Thirty one thousand English women died in one year of this incurable malady. Will not this impressive fact induce persons of rank and influence to set their countrywomen right in the article of dress, and lead them to abandon a practice which disfigures the body, strangles the chest, produces nervous or other disorders, and has an unquestionable tendency to implant an incurable hectic malady in the frame?"*

1854. Pulmonary consumption commences with the formation of tubercles in the lungs, which, in the first instance, are no larger than the head of a pin, but sooner or later they increase in size, and if sufficiently numerous, run into each other, forming indurated masses of a yellow color. At length they soften, and are converted into a cream-like substance, which passes through apertures into the air tubes, and is discharged by coughing. In this manner, cavities are formed in the lungs, and sometimes blood-vessels are destroyed, giving rise to copious hemorrhage. This, however, although a serious, is not necessarily a fatal symptom.

1855. Tubercles do not always terminate fatally, but on the contrary, may exist in the lungs in early life, and yet the individual live to an old age, without being aware of their presence. They may be prevented from enlarging and softening, by a close attention to the health, but if this is neglected, they usually hurry the patient to an untimely grave. After tubercles are once form-

* English Annual Report upon Mortality.

ed, they may be further developed by a great variety of causes, such as blood-letting, the use of mineral and vegetable poisons, a variable climate, sudden changes from heat to cold, intemperance, sedentary habits, improper food, the continued use of purgatives, excessive venereal indulgence, public speaking, playing on wind instruments, the depressing passions, tight lacing, neglected colds, improper treatment of cutaneous diseases, inhaling the dust of metallic substances, and in short, whatever deranges the health, or impairs the functions of the vital organs.

1856. The periods which consumptive patients survive, after the disease is fully developed, and proper means are not taken to arrest its progress, are variously estimated. Generally, however, the malady proves fatal within a year, but instances occur, in which the individual continues to enjoy a tolerable share of health for ten, twenty, or even fifty years.

1857. It is a remarkable fact, that consumption is usually suspended during pregnancy, and after the period of delivery, it often returns with redoubled violence.

1858. *Symptoms.* Pulmonary consumption generally commences with a dry, hacking cough, which is increased by exposure to a cold or variable atmosphere; and at the same time a sense of pain or tightness is experienced in some part of the chest, especially in taking a deep or full inspiration. The breathing is rendered difficult by bodily motion, or unusual exercise. A deep flush is observed on the cheeks; and the palms of the hands, and soles of the feet become hot or feverish after eating. The patient is harrassed by cold sweats during the night, and in the morning he rises from bed with a feeling of languor, or debility. The tongue and lips are usually red, accompanied with a peculiar whiteness of the eye. As the disease advances, the cough becomes more troublesome, particularly in the evening and morning, and instead of the frothy, or thin, ropy liquid with which it was accompanied, there is now a discharge of thick, purulent matter, of a greenish, or yellow color, and sometimes streaked with blood. The night sweats are more profuse and exhausting, and the debility and emaciation greatly increased. Acute pains are felt in the breast or sides; the eyes are sunken, but remarkably bright and expressive; the flush in the cheeks is more vivid; the breathing more quick and short; and the body wasted almost to a skeleton. The pulse, in the meantime, is small and frequent, and varies from a hundred to a hundred and twenty or thirty beats in a minute.

1859. The last stage of the disease is marked by all the previous symptoms in a more aggravated form, accompanied by a

copious diarrhœa, dropsical swellings of the feet and legs, hoarseness or failure of the voice, sore mouth, ulceration of the throat, and a peculiar, cadaverous expression of the countenance, which invariably denotes the consumptive patient.

1860. There is another form of disease, usually regarded as consumption, which is not dependant upon tubercles, but consists of a chronic inflammation of the windpipe, and air tubes of the lungs. In its earlier stages, it may be known by the bluish color of the lips, the wheezing respiration, pain in the throat, and free expectoration of matter almost from the commencement of the disorder. In the latter stages, it bears a close resemblance to pulmonary consumption, and as the treatment of the two maladies is essentially the same, they do not require to be distinguished.

1861. *Probability of a Cure.* The medical faculty acknowledge that they have no efficient remedy for consumption, and this is sufficiently apparent, for their depletive plan of treatment, together with the administration of poisons, is much better calculated to *produce*, or *aggravate* the disease, than to have any effect in its removal. Let any person with tubercles in the lungs, place himself under active treatment by a diplomatised physician, and in all probability, pulmonary consumption will be developed in a very short time. I have met with many such cases in the public hospitals and alms houses, and would earnestly caution all persons, who are predisposed to consumption, or whose lungs are in a weak or irritable state, to avoid the use of all poisonous and depletive agents, as deadly enemies to their health.

1862. Unsuccessful as the medical faculty may be in the treatment of consumption, however, there are ample proofs that it is a curable disease. Indeed, I have no doubt that patients would frequently recover, through the unaided efforts of nature alone, if they would only keep aloof from the routine physicians. Dr. Parr remarks, that he has known six cases of decided consumption to recover *spontaneously*—that is, without medical treatment. Laennec, in his work on Diseases of the Chest, acknowledges that it is *not beyond the powers of* NATURE *to effect a cure*, although he confesses there *are no certain means of accomplishing it by* ART! He made a post mortem examination of five persons, who died of other diseases than consumption, and "in every instance, cavities or tubercular excavations were found cicatrized, and for the most part lined by a semi-transparent membrane—adding testimony to the opinion, that nature does sometimes exert a curative process in cases of consumption which were apparently hopeless."

1863. We have conclusive evidence, that tubercles in the

incipient stage, may be removed from the lungs, without passing into a state of suppuration. Dr. Bellows confined a number of rabbits in a damp, cold place, and fed them on very coarse food; in a few weeks some of them were killed, and it was found that their lungs were studded with tubercles. The remainder of the rabbits were removed to a more congenial atmosphere, and fed for a few weeks on richer and better food, after which they were killed, and it was found that their lungs did not exhibit the slightest trace of tubercles.

1864. M. Coster, in a letter addressed to the Royal Academy of Medicine, in Paris, announced, that from certain experiments which he had made, he hoped to prove that where the formation of tubercles had commenced, their progress might, in a great number of cases, be arrested. He shut up a number of dogs and rabbits in dungeons, without light, where they could not exercise, and were exposed to a damp, cold atmosphere by means of wet sponges placed in the dungeons. Some of these animals were fed on their ordinary diet, while others were fed on bread containing half an ounce of carbonate of iron to the pound. All the former became ill, and the greater part tuberculous, but not one of the latter, fed on the bread containing iron, presented a trace of tubercles.*

1865. The removal of tubercles from the lungs, is accomplished, undoubtedly, by the process of absorption; and we should take a hint from nature, and endeavor to aid her in this salutary operation. The vegetable remedies recommended in this work, and particularly the courses of medicine, not only restore the general health, but increase the power of absorption, and hence it is that the advocates of the new and reformed practice are so successful in the cure of consumption. A case of the disease came under my observation, within the last year, in which the right lung contained a large tubercular excavation or cavity, and yet the patient was restored to perfect health. If the lungs are nearly destroyed, however, and there is not enough remaining for the office of respiration, it would be fallacious to hope for a cure; but it is known that respiration may be performed where one lung is entirely gone, and hence a cure is sometimes effected, even where the disease has committed very extensive ravages.

1866. Treatment. Courses of medicine are generally indispensable in this complaint, and if the system is cold, or inactive, a free use should be made of composition and spiced bitters for a few days before the first one is administered. (1597, *et seq.*)

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* Bult. de. l' Academy, *vide* London Lancet, Feb 15th, 1840.

1867. The courses need not be repeated, as a general thing, oftener than every five, or seven days, (1716, *et seq.*) and in the intervals, the warming and invigorating medicines should be employed, according to the circumstances of the case. (1667, *et seq.*) After a course, the patient should not expose himself to a cold or damp atmosphere, but sit by the fire, if the season requires it, covered with a cloak or blanket to keep him warm. He should be careful, also, not to sleep in a cold room, for this is highly injurious, and not unfrequently causes an aggravation of the symptoms. (1640–1–2.)

1868. All that has been said of diet, in a previous place, (1680, *et seq.*) is equally applicable here, and it is to be hoped the subject will receive an attentive and candid consideration. I would particularly recommend the use of the unbolted wheat bread, as a means of regulating the bowels. Butter, fat meat, and all oily or greasy substances should be avoided, as they tend to produce a morbid condition of the stomach. Tea and coffee should be excluded from the list of beverages, for they are *narcotics*, and cannot be used with any more propriety than an infusion of digitalis, or any other narcotic poison. (1644.) The skin should be rubbed every morning with a coarse towel, or the flesh brush, and as soon as the patient acquires sufficient animal heat to prevent a chill, he should use the hand bath. (1455.)

1869. If *night sweats* occur, the vapor bath should be administered just before going to bed, followed by an application of the stimulating liniment, or in the absence of this, the surface may be bathed with pepper sauce, or vinegar and cayenne. (1531.)

1870. The various remedies for the *cough* and *diarrhœa*, will be detailed under the appropriate heads.

1871. The patient should exercise regularly in the open air, when the weather will permit, but not to the extent of producing fatigue. (1709, *et seq.*) Horseback riding is particularly beneficial, and was thought by Sydenham to be the most effectual earthly remedy for consumption. (1711.) The feet should be kept warm and dry, and the clothing regulated according to the season and climate. Nor is this all, for it is equally important to defend the lungs from the cold air. "Is it not strange," says Dr. Johnson, in his work on the Liver, "that we should be so very solicitous about heaping fold over fold on the surface of the body, while we never dream of the extended surface of the lungs, which we leave completely exposed? Is it not still more strange, that this should be forgotten, when daily observation shows that the lungs are the organs which, nine times out of ten, suffer by this exposure? We cannot too strongly enforce the necessity, therefore, of guarding the organs of respiration from the direct

influence of the cold air, by such muffling about the face as may not only detain a portion of the air expired from the lungs each time, but communicate a degree of warmth to each inhalation of atmospheric air. A large net, such, for example, as is vulgarly called a comforter, folded loosely around the face, will receive a portion of caloric or heat from the breath at each expiration, which portion will be communicated to the current of air rushing into the lungs at each inspiration, and thus a frigid atmosphere is, to a considerable degree, obviated."

1872. *The Respirator.* This is a newly invented instrument of great value, which will enable consumptive patients to exercise in the open air, even in the depths of winter, without experiencing any inconvenience, provided they are warmly clad. Dr. Bowditch says, "it was devised about four years since by Mr. Jeffreys of London, and consists of numerous layers of fine metallic wires, so arranged as to form a minute net work. These are prepared in such a manner that they can be placed over the mouth, and the person will be able to face the severest cold, or most violent wind, without difficulty; for, in the first place, the air is warmed, and in the second, the violence of the current is wholly checked by the various angles each particle of air meets with in its passage through the instrument. The theory of its operation is this; the wire becoming heated by the expired air, in its turn, warms the external atmosphere that is drawn into the lungs. There are two kinds, one called the oral, because it covers merely the mouth, the other orinasal, because it covers the nostrils, as well as the mouth. As it may be imagined, the instrument is of great service to all who are liable to cough on a change of temperature, and it is very extensively used in England. So far as I can learn, the first one introduced into Boston, was brought here towards the latter part of the winter of 1838, but even now comparatively few individuals know its value as a palliative in all diseases of the chest and air passages. Various good results have been observed to follow its use. I shall speak of some of those results, as evinced by thirteen persons who have used it in Boston.

1873. "All, without exception, speak very warmly in favor of the instrument. One who was very much troubled with inflammatory affections of the mouth and gums, owing frequently to exposure to cold air, was very much relieved. Every one knows the pang excited by a current of cold air upon a decayed tooth, but with the respirator this difficulty is avoided. All, so far as I can learn, have found that they were prevented from having an access of coughing from sudden changes of temperature. One told me he

could scarcely believe that so simple a contrivance could be of any importance, and therefore had recourse to his handkerchief, as a substitute, and the result was a violent attack of coughing. One individual had spent the winter of 1838–9 in the South, and prepared to go again last season, but being persuaded to keep at exercise in the open air of the country, and with the respirator constantly in use when out of doors, he was very comfortable during the winter. Another had been unable to sweep her room without great fatigue, and frequently an attack of asthma. Upon using an instrument that I made for her, which was of a less complicated character than the English, being made of tin instead of silver or gold, she was able to arrange a number of apartments without difficulty of respiration, and with much less fatigue than she had previously experienced in attending to one room merely.

1874. "This brings to my mind another patient, who told me that before beginning to use the instrument, she was frequently so exhausted by a short walk, that she found it impossible to speak or attend to any thing when she arrived at her place of destination. With the use of the respirator she walks with ease. Again, a sensation of warmth is diffused over the whole system by the same means, so that the patient observes instantly when the respirator is off the mouth, by the sensation of coldness in the chest, or over the whole frame.

1875. "Another point I will mention which seems to me to be important, though less so to the physician than to his patient. One individual informed me that after beginning to use the respirator, his physician's bill for attendance upon him was much less than it had been for many years previous, solely, as was believed, in consequence of being able to go out without having an attack of bronchitis supervene. The same person now walks instead of riding, whereby another item of expense is materially diminished."*

1876. I fully concur with Dr. Bowditch, in the favorable opinions he has given of the respirator, and would advise every consumptive patient, who lives in a cold, or variable climate, to procure one without delay. I have recommended them in several instances, and they have invariably been productive of good results.

1877. *Ramadge's Tube.* This is the invention of Dr. Ramadge of London, who has been physician to the London Lung Infirmary for nearly twenty years, and from all the information I can gain upon the subject, I am disposed to consider it a very im-

* Dr. Smith's Medical Almanac for 1841.

portant instrument in the treatment of consumption. I have made a few trials of it, recently, in my own practice, and was highly pleased with the results. It is designed for the exercise and expansion of the lungs, being five or six feet in length, and half an inch in diameter, prepared with a mouth piece, through which the patient is enabled to breathe. The Rev. Mr. Howe, formerly chaplain to the New York City Hospital, has introduced it into this country, and written a little work descriptive of its beneficial effects. He says, "The use of this tube for half an hour will benefit the chest to a greater degree, than an hour's ride on horseback, or the vigorous exercise of sawing or chopping wood, and this without the weariness accompanying these physical exertions, which invalids are frequently unable to endure."

1878. The tube is so constructed, says Mr. Howe, that the air is admitted into the lungs gradually, while it is not permitted to rush out at once, but is retained, and slowly emitted again, by which process the lungs are gradually expanded.

1879. "Persons who lead a sedentary life," continues the writer, "particularly public speakers, lawyers, and ministers of the gospel, who have weak voices, or are afflicted with inflammation of the throat, accompanied with hoarseness, and an occasional loss of the voice, or those who are liable to take cold in the throat, or upper part of the chest, upon every change in the weather, will find the tube an effective remedy, if they persevere in its use for a few months. The exercise produced by it, and the action of the air upon the throat, is such that the changes of the weather, and exposure to the air, under any circumstances, will not affect the throat, or bronchial tubes in the least. Delicate females, who have not sufficient exercise, will find the use of it very pleasant and healthful. Those whose chest or lungs are at all weak or contracted, will find that the tube will accomplish great things for them; it will improve the voice, and increase its power and compass. It will do more towards curing consumption, than a sea voyage, travelling, or a change of climate, and that too without the necessity of leaving home, or neglecting one's regular business."

1880. It must not be supposed, observes the author, that Dr. Ramadge "professes to cure all persons in all stages of consumption, but he does assert, that those predisposed to the disease, who will use the tube for a few months, as directed, will be rendered secure from an attack of consumption. With regard to those who are laboring under the malady, if there be any possible human means to save them, and the lungs throughout are not a mass of corruption, a judicious use of the tube, with proper treatment, will do more than any thing else to restore them to health."

1881. Mr. Howe says, "Where the lungs are diseased, the exercise, expansion, and action of the air, may cause them to be sorer than they were previously; there may be a great deal of local irritation for some months, which may excite alarm; and upon the softening of the tubercles, there will be a more free expectoration, but this is not to be attributed to any actual increase of the disease. After the patient has used the tube for two or three months, all tendency to the formation of fresh tubercles will have been removed, and whatever irritation, or uneasiness may exist, and sometimes it is considerable, will be in the part which was originally diseased."

1882. Mr. Howe was himself cured of consumption by the use of Dr. Ramadge's tube. He says, "While performing my duties as chaplain in the New York City Hospital, I took a severe cold, which soon settled into chronic bronchitis, and in a few months, notwithstanding the best medical aid, it was clearly ascertained that my lungs were tuberculated, and that I was laboring under pulmonary consumption. The various remedies prescribed by regular practitioners were resorted to, which rather aggravated than relieved my complaint, and then recourse was had to the popular nostrums of the day. These too, were unavailing, and my physicians agreed that the only possible means of recovery would be a sea voyage, and travelling. Accordingly I went to England, where I consulted various physicians, but, so far as I could judge, the practice pursued was the same as in the United States, and instead of being benefited, every means only tended to make me worse. In London I was so indisposed as to be confined to my room, and obtained the advice of Dr. D——, one of the most celebrated physicians in that city, who advised a blister, which made me worse, and resulted in great weakness of the chest. At length I consulted Dr. Ramadge, who advised me to use the tube, which gave me relief at once, and I gradually improved in health, until my chest was quite well."

1883. "One great advantage arising from the use of the tube," continues Mr. Howe, "is the permanent enlargement of the chest and lungs. Not only is the whole thorax called into action, the upper as well as the lower ribs, but by a few months' inhalation, the chest of the invalid will assume a different formation, and undergo a permanent enlargement of from one to three inches. This is true in my own case, and has been proved in the case of others under my immediate observation. The lungs are also thereby enlarged, so that a person will, at the expiration of two or three months, be enabled to take in double or threefold the quantity of air that he did at first. * * *. Where one lung is quite gone with disease, Dr. Ramadge gives instances in his work, in which inha-

lation has not only kept up the respiration, by forcing the air through the cells of the lungs, but in which persons have enjoyed comfortably good health for years."*

1884. Dr. Ramadge gives a particular caution not to use the tube in the last stages of consumption, for then it would be manifestly injurious. He considers its use injudicious, also, in confirmed asthma, and diseases of the heart; but in other affections of the chest, he says it will prove of service.

1885. Patients who cannot afford to purchase a tube, should practice breathing through the nostrils, as a substitute. This is to be accomplished by closing the mouth, and inhaling the air through the nostrils so forcibly as to expand the chest. The individual should be in a sitting posture, as the enlargement of the chest will then take place with greater ease. It is sometimes difficult to inflate the lower lobes of the lungs at the outset, but by practising half an hour daily, as directed for the tube, the patient will ultimately succeed. The tube itself, however, is much more agreeable and effectual.

CONVULSIONS OR FITS.

1886. Convulsions result from an irregular action of the muscles, and may be either partial or general. In St. Vitus's dance, for instance, the limbs only are effected, while in epilepsy, the whole body is convulsed. When the muscles contract and remain stiff for a longer or shorter time, as in locked jaw, it is called a *spasm*, but when the contractions and relaxations succeed each other in rapid succession, as in epilepsy, the term *convulsions* is employed.

1887. The causes of this malady are various. It sometimes indicates an affection of the brain, and often accompanies other diseases. Women are subject to it during pregnancy and labor. It frequently attacks infants during the irritation of teething. It often occurs after excessive depletion by the lancet, or otherwise. If a dog be bled in a small quantity for several days in succession, he will finally die in convulsions. Indigestible food, worms, intemperance in eating and drinking, and external injuries, are among the familiar causes of this complaint.

1888. TREATMENT. The most effectual remedy in convulsions, is the antispasmodic tincture, (1266, *et seq.*) which

* The Ramadge tubes may be obtained of Mr. Howe, 209 Grand street, New York, and at the publication office of this work—price $5,00 each.

should be given in the dose of two or three tea-spoonfuls, without delay, and repeated according to the necessity of the case. In the meantime, one or two strong injections (1567, 1574) should be administered, as these have a powerful influence in quieting the irregular action of the muscles. As soon as the spasms, or convulsions abate, cayenne and bayberry tea, containing a portion of scullcap, or lady's slipper, should be given to produce a perspiration, and if the symptoms require it, this should be followed by an emetic, or a course of medicine.

1889. If the jaws are locked or pressed together, the antispasmodic tincture may be poured into the mouth between the teeth, and as soon as it comes in contact with the parts about the root of the tongue, the rigidity of the muscles will give way.

1890. If a return of the convulsions is feared, a course of medicine should be administered, and the usual tonics and stimulants employed to invigorate the system. Attention to diet, exercise in the open air, and the use of the cold bath every morning, are important in this complaint, where it has been of long standing.

CORNS.

1891. These chiefly exist on the toes, and about the feet, and arise as a consequence of wearing tight shoes. They have a horny appearance, and are formed by a thickening of the cuticle or outer skin. By pressure on a corn, the nerves beneath are irritated, and hence the severe pain which they occasion.

1892. TREATMENT. The individual should soak his foot in warm water, until the corn is softened, and then pare it off with a sharp knife, taking care not to wound the living flesh. He may then moisten a strip of bladder, or suet skin, with nerve ointment, rubbing it between the hands until it is soft and pliable, and wrap it round the toe, or part affected, suffering it to remain until worn away by the shoe. The application may be repeated, if necessary. Dr. Thomson says he has seldom known this to fail in effecting a cure.

COSTIVENESS.

1893. An evacuation by stool every twenty four hours, is an indispensable requisite of health, but if an individual goes longer than this, he often feels heavy, dull, and feverish, and if he becomes habitually costive, a long train of symptoms generally ensue,

such as headach, sickness, flatulency, swelling of the abdomen, dry or parched tongue, bad taste in the mouth, offensive breath, and a partial or total failure of the appetite. The sick-headach, piles, and a variety of nervous and convulsive affections, are often dependent on a confined state of the bowels.

1894. Costiveness is owing to a deficient vermicular or peristaltic motion of the intestines, (71) and along with this, the mucous membrane by which they are lined, does not secrete the necessary amount of fluid, so that the fecal matter becomes dry, and hard. The liver is also frequently torpid, and does not furnish bile in sufficient quantity, which has been aptly termed "the natural physic of the body." Medical authors inform us of cases in which patients were without a stool for many months. I was consulted by a young man of extremely sedentary habits, within the past year, who had been without an evacuation from the bowels for twenty three days.

1895. Errors in diet, and want of exercise, are frequent causes of the malady. The use of bread made of superfine flour, especially if adulterated with alum, as is a common practice with the bakers, is one of the most unfailing sources of costiveness with which I am acquainted. Should this not confine the bowels, however, the patient has only to overload his stomach, drink freely of strong tea, or coffee, and remain at home by the fireside, instead of exercising in the open air, and he will soon find it necessary to call in a physician, or apply to Brandreth for a box of pills.

1896. Treatment. Individuals who have resorted to the use of physic in costiveness, need not be told that although it may afford temporary relief, it leaves the bowels more torpid or inactive than they were at first. Dr. Marshall Hall, whom I have previously quoted on this subject, remarks, "The habitual use of active cathartics, although attended with temporary relief, seldom fails to bring on or aggravate a permanent state of costiveness." (951) Besides, purgatives act upon the principle of depletion, weakening or debilitating the patient, and cannot be used with any more propriety than the lancet.

1897. Fat meat, butter, and all oily or greasy substances have a purgative effect, and are therefore calculated to do harm. Dr. Cullen found that four ounces of fresh butter, taken in the morning, would produce one or two extra stools during the day. Hence, an individual might as well take a dose of castor oil, at breakfast time, as to eat freely of butter, for the effect is much the same.

1898. The best remedy I have found for costiveness, is the

unbolted wheat bread, (1181, *et seq.*) which regulates the bowels, without producing any of the evil effects of physic. The meal of which the bread is made, may be manufactured into cakes, crackers, hasty pudding, or gruel, and used for the same purpose; or the wheat itself, in its natural state, may be formed into a jelly, by boiling it a sufficient time in water, (1435) and eaten with sugar, or molasses. The latter is excellent to regulate the bowels of a convalescent.

1899. Persons who are predisposed to costiveness, should subsist principally upon vegetable food, take their meals at regular hours, eat moderately, dispense with the use of tea and coffee, exercise in the open air, and rub the skin from head to foot every night and morning with a flesh brush, or coarse towel. The cold bath (1448, *et seq.*) is also an important remedy. Dr. Good mentions the case of a female who had no evacuation from the bowels for four months, and was cured in eight days by the use of the cold bath alone.

1900. Injections may always be used successfully to give immediate, or temporary relief.

1901. If a costive state of the bowels is accompanied with feeble health, a few courses of medicine should be administered.

1902. Among the various medicines which may be used beneficially in this complaint, are boneset tea, (713) cayenne and molasses, (767) pepper sauce, (1141) the bird peppers swallowed whole, (755, 767) golden seal, (897) spiced bitters, (1246) and lobelia pills, (1299.)

1903. Powdered charcoal is thought by some people to be an innocent and useful remedy in costiveness, but it irritates the bowels, and like magnesia, often collects in a mass, and forms an obstruction in the intestinal tube.

COUGH.

1904. A cough may be the effect of a cold, or a symptom of some more serious complaint. Sometimes it is dry, and at others accompanied with an expectoration of matter. It does not often excite alarm, unless it has been of long continuance. Though generally regarded as an enemy to health, Dr. Good justly observes, that it is to the lungs, what vomiting is to the stomach, causing a discharge of matter from the air passages, which would otherwise prove injurious. The common practice, therefore, of checking a cough by the use of opiates, without removing the cause, is a serious, and sometimes a fatal error. Mrs. L—— of Philadelphia, who had been troubled for a long time with a hack-

ing cough, informed me that in the course of six months, she had taken at least a quart of *brown mixture*, which is a preparation of opium. At the end of that time the cough left her, but the *cure*, as she termed it, was purchased at a dear rate, for the opium had constipated her bowels, destroyed her appetite, rendered her skin sallow, and impaired the sensibility of her whole nervous system.

1905. TREATMENT. If the cough is symptomatic of consumption, or any other disease of an obstinate or dangerous character, we should cleanse and invigorate the system with courses of medicine, or endeavor to restore the health by proper attention to diet, exercise, and cold bathing. A cough which results from a sudden cold, may be cured, oftentimes, by taking a dose of composition on going to bed, and placing a bottle of hot water wrapped in a damp cloth at the feet. If necessary, the dose may be repeated for several nights in succession, and if the appetite is impaired, the spiced bitters may be taken two or three times a day.

1906. Inhaling the fumes of vinegar, or even the vapor of water, is useful in coughs. Among other important remedies, are cayenne and molasses ; (773) anti-dyspeptic bread ; the tincture of lobelia dropped on loaf sugar; (1283) lobelia pills; vervain, and boneset teas ; (708, 714) and the cough powder, sirup, balsam, and jelly. See index.

1907. If the cough is dry and harsh, it may be greatly relieved by covering the patient with a blanket, so that he may breathe the smoke of a piece of burning paper, in which cayenne has been wrapped. White paper should be used instead of the colored, as the latter is frequently poisonous; or instead of the paper, a small portion of cayenne may be sprinkled on a red hot shovel, beneath the folds of the blanket. This will cause perspiration, loosen the cough, and produce free expectoration. The operation should be performed at bed time, and repeated two or three times a week, until the desired relief is obtained. As soon as the patient is in bed, he should take a dose of composition tea, and have a bottle of hot water wrapped in a damp cloth placed at his feet. I have known two or three applications of this remedy to break up a cough of six or eight weeks' standing.

CROUP.

1908. This is an inflammatory affection of the windpipe or trachea, which extends, in most instances, to the air passages of the lungs. It is chiefly confined to children under twelve years

of age, but occasionally attacks adults, and even persons in advanced life. It is most prevalent in damp and changeable weather, and hence its frequent occurrence in the spring and autumn.

1909. Croup is sometimes very sudden in its attacks, usually coming on in the night, but is generally ushered in by a harsh, dry cough, impeded respiration, quick pulse, and slight febrile symptoms. When the disease assumes its ordinary violence, the cough is loud and ringing, and the breathing much oppressed, accompanied with a wheezing sound. The face is flushed, and the skin hot. The cough, in some cases, is dry at the commencement of the disease, and in others is accompanied by a free expectoration of matter. The inner or mucous coat of the windpipe, as well as that of the air passages, is sometimes covered with false membrane, (1397) which serves still further to embarrass the respiration, unless it is detached and coughed up.

1910. Croup is a dangerous disease, and if not faithfully watched, may proceed rapidly to a fatal issue. Dr. Marshall Hall says, "it terminates in some cases within twenty four hours, more commonly it lasts two or three days, and in rare instances it continues for a week and upwards. In favorable cases the cough becomes more loose, and less frequent, the breathing easy, and the heat and pulse less. But we cannot account the patient safe, until he has passed a night without a return of the symptoms."

1911. Treatment. In mild cases of croup, nothing further will be required than an occasional dose of composition to keep the skin moist; and at night, on retiring to bed, a bottle of hot water wrapped in a damp cloth should be placed at the feet. If the bowels are irregular, an injection should be administered once or twice a day. The diet should be light, and easy of digestion, and the skin well rubbed night and morning with a coarse towel, or flesh brush. One very important precaution is, to keep up a uniform temperature in the sick room, for those who have had the management of croup, know that as soon as the fire is neglected, or the air in the apartment becomes chilly, there is a return, or increase of the malady.

1912. The stimulating tea (1515) is an excellent medicine in croup, particularly if there is much cough, or difficulty of breathing. The lobelia and scullcap, of which it is partly composed, are well adapted to remove these two symptoms. It should be given to the extent of producing perspiration.

1913. If the disease comes on suddenly, and the symptoms are violent, a tea-spoonful or more of the tincture of lobelia should be given, either alone, or in composition tea, repeating it in five or ten minutes, if necessary, and administering one or two injections.

As soon as relief is afforded, a full and thorough course of medicine should be given, so that the disease may be effectually removed.

1914. In severe cases, the throat should be rubbed for ten or fifteen minutes with a mixture of vinegar and cayenne, (1531) and a flannel wrung out of this liquid, tied round the neck, renewing the application every two or three hours.

1915. Emetics are important in croup, because they not only equalize the circulation, but serve to expel the phlegm or mucus from the air passages of the lungs. (645.)

DEAFNESS.

1916. Deafness may proceed from various causes, such as a defect in the structure of the ear; inflammation; debility or relaxation; the presence of some foreign body; a deficiency of wax; or what is more common, a hardening of the wax, which sometimes closes or obliterates the passage leading into the ear.

1917. TREATMENT. I have known this malady to be cured by the administration of *courses* for some other disease, but that was only in particular cases, for if the deafness is owing to a defect in the structure of the ear, a cure is out of the question. In case of hardened wax, the ear should be syringed every night and morning with an infusion of lobelia, about milk warm, or instead of this, an infusion of raspberry leaves, rendered slightly pungent by the addition of rheumatic drops. The ear should be closed with a piece of raw cotton, saturated with the drops, so as to exclude the air. This treatment has cured a great many cases of deafness. If a foreign substance is lodged in the ear, warm water should be injected into it with considerable force, so that the offending body may be washed away.

DELIRIUM TREMENS.

1918. Delirium tremens, mania à potu, or craziness from drink, as the disease is variously called, is characterized by delirium, and a tremor of the hands, and other parts of the body. It is principally confined to persons addicted to the use of ardent spirits, who have been deprived, for some time, of their accustomed stimulus. It commences with lassitude, giddiness, loathing of food, and nausea, or vomiting. The eyes have a wild or glaring expression, the hands become tremulous, and the patient

is restless, fretful, very talkative, and wholly unable to sleep. The bowels are torpid, the thirst urgent, and the tongue red, or coated. When the disease is fully developed, the patient talks and raves violently, thinks he is about to be attacked by robbers, flies to the window or door to make his escape, fancies that he hears strange noises, and declares that his bed is surrounded by furious beasts, which are ready to devour him. Indeed, it would be impossible to give an adequate description of the wild and horrible conceits which are constantly passing through his brain. In some cases, fatal convulsions, or apoplexy ensue. The paroxysm of madness has been known to continue a week, and in some instances a month, terminating at last in permanent insanity.

1919. A tendency to sleep, in this disease, is a favorable symptom, but if the delirium continues, accompanied with stupor, cold extremities, and a twitching of the hands and muscles of the face, there is every reason to apprehend a fatal issue.

1920. Opium eaters are subject to delirium tremens, as well as those addicted to the use of ardent spirits.

1921. Treatment. I know of no medicine that will so speedily and effectually quiet the delirium in this disease, as lobelia inflata; and in some instances, the patient will sink into a calm and refreshing sleep as soon as he is put under its influence. A tea-cupful of cayenne and bayberry tea, (512) to which two or three tea-spoonfuls of rheumatic drops, and a tea-spoonful of the tincture of lobelia have been added, should be given, repeating it in ten, fifteen, or twenty minutes, and administering a stimulating injection, containing a table-spoonful or more of the anti-spasmodic tincture, or a heaped tea-spoonful of the green, or brown lobelia. (1567, *et seq.*) Two or three repetitions of the injection will be found useful, where the delirium is furious. Brandy, in a small quantity, is a beneficial agent, and in this disease, arising, as it usually does, from an absence of the wonted stimulus, should always be employed. I have given it in the dose of a table-spoonful, repeating it once or twice, with the most decided advantage. Heated stones wrapped in damp cloths should be placed at the feet and sides, and a course of medicine administered, giving lobelia in a sufficient quantity to cleanse the stomach effectually. After the course, the patient should be careful to guard against a relapse, which is liable to occur. He may take an occasional dose of the stimulating tea, (1515) or a strong tea of scullcap, (924) either of which is very useful in checking a tendency to delirium, and nervous tremors. If the disease returns, the *course* must be repeated.

1922. It is worthy of remark, that in some cases of delirium

tremens, the morbid craving for alcoholic drinks entirely subsides, after two or three *courses* have been administered.

1923. Violence should not be used in restraining the patient, during the prevalence of delirium, unless it is absolutely necessary, for the more kindly he is dealt with, the more tractable will he generally prove.

DIARRHŒA.

1924. This disease consists of watery, slimy, or perhaps frothy evacuations by stool, which are of a yellow, green, or brown color, and very offensive. In some instances they are mixed with particles of undigested food, and are generally accompanied by tenesmus, and griping pains in the bowels. If copious, they soon reduce the strength of the patient, for they drain away the serous or watery part of the blood. The vermicular or peristaltic motion of the bowels (71) is greatly increased. The disease is produced by a variety of causes, such as intemperance in eating and drinking, vitiated bile, worms, acidity arising from imperfect digestion, and exposure to a damp or variable atmosphere.

1925. Treatment. In ordinary cases, a cure may be effected by the use of bayberry tea and rheumatic drops, adding a table-spoonful or more of the latter to a tea-cupful of the former, and repeating the dose every hour until the diarrhœa is checked. The dysentery or cholera sirup is also an excellent remedy. Exposure to cold should be avoided, and the feet kept warm and dry.

1926. If the disease assumes a chronic form, it will be necessary, where the case is obstinate, to administer courses of medicine, repeating them once or twice a week, as circumstances may require. Between the courses, if the stools are frequent or copious, injections should be administered two or three times a day, and a free use made of composition and spiced bitters. The following preparation will be found beneficial. Take of poplar bark a tea-spoonful, cayenne one or two tea-spoonfuls, bayberry three tea-spoonfuls, boiling water a pint; steep, and sweeten to suit the taste. This tea should be kept warm, and two thirds of a tea-cupful taken several times a day. The addition of slippery elm, to render it somewhat mucilaginous, will increase its good effects. The dysentery sirup is useful in the chronic, as well as the acute form of the disease. A tea of prickly ash is also a valuable remedy. The patient must keep his skin moist, and by all means avoid exposure to a damp or chilly atmosphere. A rigid attention to diet is also indispensable. If food of an improper kind

passes from the stomach into the bowels in an undigested state, it keeps up the irritation upon which the disease depends, and under these circumstances, it is impossible to effect a cure, notwithstanding the most active and thorough treatment. Hence, the patient should avoid the use of meat, butter, gravies, pastry, rich or unwholesome mixtures, and every thing which tends to impair the digestive functions, and subsist principally upon bland and nourishing fluids, such as the unbolted wheat meal gruel, or slippery elm boiled in milk. (1431.) The wheat jelly, (1435) eaten moderately, is an excellent article of diet. The skin should be rubbed night and morning with a coarse towel, or flesh brush, and if the weather is cold, an occasional vapor bath, followed by an application of the stimulating liniment, (1307) will prove of service. On retiring to bed, a bottle of hot water wrapped in a damp cloth should be placed at the feet.

DISLOCATIONS.

1927. In dislocations, says a writer on surgery, the limb or part is either shortened, lengthened, or distorted, according to the nature of the accident, accompanied with pain, swelling, and a partial or total loss of motion. The head of the dislocated bone is frequently felt in its new position, while the soft parts about the joint lose their peculiar shape, or fulness. Any movement of the limb causes an increase of pain; and sometimes a grating or crackling noise is heard, as in fractures. Mr. Castle remarks, "When dislocations have only occurred a day or two, there will sometimes be found a slight crepitation, which is owing to the escape of synovia from the joint into the surrounding cellular membrane; this becomes thickened by the absorption of the more fluid part, and crackles under motion—a circumstance which every practitioner should be aware of, as the case may be mistaken for fracture; but there is not that peculiar grating felt which the extremities of a fractured bone produce."

1928. "Dislocations," says Mr. Castle, "generally arise from violence, and are accompanied by laceration of the ligament of the joint, but sometimes they happen from relaxation of the ligaments only. If muscles are kept long upon the stretch, their power of contraction is in a great measure lost; or if from paralysis, they lose their action, a bone may be easily dislocated, and reduced as quickly. Dislocations frequently arise from ulceration of the joints, by which the ligaments are detached, and the bones become altered in their relation to each other; this frequently happens in the hip. Dislocations are sometimes accompanied

with fracture. At the ankle joint, a dislocation seldom occurs without fracture of the fibula; and sometimes the acetabulum* is broken in dislocations of the hip joint. When a bone is both fractured and dislocated, it is best to reduce the dislocation without loss of time, taking care that the fractured part be strongly bandaged in splints, to prevent any injury being done to the muscles; for if this is not attended to at first, it cannot be afterwards, without, in all probability, disuniting the fracture."

1929. Dislocations are divided into the *simple* and *compound*, the first consisting of a dislocation merely, while in the second, there is an external wound communicating with the cavity of the dislocated joint. The latter are frequently attended with danger, from the fact that inflammation is apt to arise.

1930. In compound dislocations, says Dr. Cooper, it is a most important point to obtain a prompt union of the wound, as the injury can afterwards only be regarded as one of a simple kind. The lips of the wound are, therefore, to be brought accurately together with sticking plaster, and the joint kept perfectly quiet in splints.

1931. The hip and shoulder joints are the most frequently dislocated, because they are loose in their sockets, and admit of motion in every direction.

1932. There is but little difficulty, as a general thing, in returning a dislocated bone to its place, if we succeed in overcoming the rigid, involuntary contractions of the muscles. In accomplishing this, physicians and surgeons often employ the strength of three or four men, assisted perhaps by a pair of pulleys, and such is the force which they sometimes exert, that they fracture bones, and lacerate muscles, blood-vessels, and nerves. An accident of this kind happened to the late Professor Physic of Philadelphia, who is styled the Father of American Surgery, and the same dreadful results frequently occur in the hands of his less distinguished followers.

1933. A more speedy and effectual method of relaxing the muscles, and that too without increasing the sufferings of the patient, is to administer a tea of cayenne, or composition, until perspiration ensues, and wrap the injured part, for some distance above and below the joint, in cloths or napkins of several thicknesses, and pour water upon them, as hot as it can be borne, for ten or fifteen minutes. If however, this treatment is insufficient, it is only necessary to administer a vapor bath, followed by an emetic of lobelia, which will completely relax the whole muscular system. As soon as the reduction is accomplished, the cloths

* The cup-like cavity or socket which receives the head of the thigh bone.

should be reapplied, and *cold water* poured upon them, which will favor the contraction of the muscles, and enable them to keep the bone in its place. The lobelia, I will remark, administered in the form of injections, has a more relaxing influence than when introduced into the stomach. (1561.)

1934. "Difficulties in the reduction may arise," says Mr. Castle, "from the head of the bone catching against the opposite surface, and then the former requires to be raised before it can be returned. The peculiar ligaments of the joints may also interfere with the reduction. This is particularly to be noticed in the knee, where the bone should be moved in such a direction as to relieve the ligament which remains entire. The ligaments of the ankle joint are of extraordinary strength, and the bones of this joint will often break, rather than the ligaments give way."

1935. When a round headed bone is dislocated, it should be drawn out of the place in which it is lodged, by an extension of the limb, and then by the necessary rotation, it will readily slip into its socket.

1936. With regard to the efficacy of lobelia and the vapor bath, in relaxing the muscles, no one will entertain a doubt who gives them a trial. Dr. W. R. Griffin, a physician of the old school, in some remarks upon the subject, says, "I will cite a case which tends to illustrate the remarkable degree to which the muscular fibres may be relaxed by the use of lobelia, and its concomitant remedies. A Miss Merchant of my acquaintance, met with an accident which occasioned a complete dislocation of the thigh bone. The most eminent surgeons were immediately sent for, who, owing to the powerful contraction which existed in the muscles of the limb, were unable to effect a reduction. After every means had been employed which are generally resorted to on such occasions, the case was abandoned as incurable, and the young lady, anticipating herself a cripple for life, was left to hobble about upon crutches, a pitiable spectacle of professional ignorance. In this situation she continued for more than a year, when in consequence of some temporary indisposition, she applied to Dr. Cornell of Clinton. While she was under his care, the remedy above mentioned was administered with a liberal hand. Upon one occasion, when the system was completely under the influence of this medicine, the dislocated limb, by an accidental movement, became fixed in its natural socket, so that the young lady was immediately enabled to walk with as great facility as though the accident had never occurred. The relation of this case may afford a profitable hint to surgeons."

1937. The vapor bath, independently of the lobelia, is an invaluable agent in producing muscular relaxation. Dr. Madden says

he has trembled to see the Turks dislocate the wrist and shoulder joints, and reduce them in a moment, which they were enabled to do by "twisting and kneading" their limbs in the vapor bath. He adds, the most rigid joints are rendered pliant by this practice.*

1938. A blacksmith residing near Philadelphia, had his shoulder dislocated downward into the armpit, and called in two diplomatised physicians, who exerted all the strength of which they were capable, to no purpose. They left the patient and went to Philadelphia in search of pulleys. The blacksmith in the meantime, not willing to undergo any additional tortures, unless it was indispensably necessary, sent for one of his neighbors, who gave him some composition, and made an application of cloths and hot water, as previously described, with a view of relaxing the muscles. As soon as this was accomplished, he drew the patient's arm over his shoulder, giving the head of the dislocated bone an upward movement, and without any difficulty, it slipped into its socket. Presently the physicians returned with the pulleys, but was very much surprised to find that there was no occasion for their use.

1939. A dislocation should be reduced as speedily as possible, for after a few weeks, the bone forms adhesions to the parts with which it is in contact, and the muscles also become accommodated to their new position, so that it is difficult, or perhaps impossible, to restore the bone to its place. "In recent cases," says Mr. Castle, "reduction is easily effected, but after a few weeks, or even days, it is accomplished with difficulty. In these cases, where it has been said the dislocations have been reduced a long time after the accident, the patient has never been able to use the joint extensively. In muscular persons, the reduction of the shoulder ought never to be attempted after three months; but if the patient be less muscular, four months should be the utmost limit. In dislocation of the thigh, two months may be fixed on as the time, beyond which it would be wrong to make any attempt, excepting in a person of very relaxed fibre, when a little more time may be allowed."

1940. A female correspondent of the Botanic Luminary, published in Michigan, states that she was called to a woman whose hip had been dislocated by a fall, and that three diplomatised physicians and one bonesetter had endeavored ineffectually to restore the bone to its place. The common means of extension had been resorted to, and the patient abandoned to the resources of nature. When the writer first saw her, it had been six weeks since the accident, and eleven days since the physicians

* Travels in Turkey, Egypt, Nubia, and Palestine. Philadelphia, 1820.

had deserted her as a hopeless case. Cayenne and nerve powder were administered freely, and the hip, and adjacent parts wrapped in cloths, upon which water was poured as hot as it could be borne, for about fifteen minutes, when the muscles were so relaxed, that the dislocated bone was returned to its socket without difficulty. In this case, there had been no opportunity for adhesions to form, or the reduction could not have been accomplished so easily, even though the muscles had been completely relaxed.

1941. If the soft parts are wounded in a dislocation, the bone should be replaced, the wound cleansed from dirt, its lips brought together with adhesive plaster, and the usual applications made to exclude the air. The limb should then be placed in that position in which there is the greatest relaxation of the muscles, and the joint suffered to rest until the lips of the wound have united. If a bone protrudes, and is covered with dirt or dust, it should be washed clean with a sponge and warm water, before it is replaced. "It is an exceedingly bad practice," says Dr. Cooper, "to saw off the protruding end of a dislocated bone in compound cases. The bone may always be replaced; and what good the proposers of this plan have in view is difficult to conceive." If there is danger of the joint becoming stiff, it should be moved gently at the end of four or five days, or as soon as the lips of the wound are sufficiently united to admit of this motion.

1942. If the wound becomes hot, or painful, cloths should be applied, and wetted occasionally with cold water, as directed for burns and scalds, (1813–14) and cayenne, or composition administered internally to keep a perspiration. This is necessary in injuries of every description, for while the skin is moist, and the equilibrium of the circulation maintained, there is no danger of febrile or inflammatory symptoms ensuing. If the stomach is disordered, it should be cleansed with an emetic of lobelia; or if the general system is much affected, it will be necessary to administer a course of medicine.

1943. If the wound suppurates, or becomes offensive, it must be poulticed.

1944. The two joints most frequently dislocated, as I have said, are the shoulder and hip. The first may be thrown out of place in three directions, downward into the arm-pit, backward toward the spine, and forward upon the clavicle or collar bone. In the downward dislocation, the head of the bone presses on important nerves, and generally causes a great degree of pain. The head of the thigh bone may pass out of its socket in every direction, but the usual dislocation is upwards, in which case the limb is shortened, turned inwards, and not easily separated from the other.

DROPSY.

1945. Dropsy is a collection of watery fluid in the cellular membrane,* or any of the cavities of the body, as the chest and abdomen. It is caused by a weakness of the absorbent vessels, which are unable to take up the fluid and discharge it from the system through the natural channels. It is a frequent result of blood-letting, and the internal use of mercury, arsenic, and other poisons. Measles and scarlet fever, treated on the antiphlogistic plan, are often followed by dropsy. The skin in this disease, is hot and dry, accompanied with loss of appetite, thirst, scanty urine, and an inactive state of the bowels.

1946. In *dropsy of the abdomen*† the breathing is short and difficult, and if the accumulation of water is considerable, the patient is obliged to limit his food and drink to the smallest possible quantity. If pressure be made upon the abdomen, pain or soreness is experienced. In the latter stages of the disease, a short, dry cough, and swelling of the feet and legs are liable to ensue.

1947. *Dropsy of the chest*‡ commences with a feeling of tightness at the lower part of the sternum or breast bone, with a difficulty of breathing while in an erect position, which is greatly increased by exercise. While in bed, the patient is most easy with his head and shoulders somewhat elevated. He complains of thirst, and is troubled with a hacking cough. His sleep is often interrupted by sudden starts. His feet swell, his countenance has an anxious expression, and his extremities are often cold and benumbed. Pressure upon the abdomen just below the ribs, so as to force its contents upward against the diaphragm, is followed by coughing, and a feeling of suffocation.

1948. *Dropsy of the cellular membrane* is termed *anasarca*, and at the commencement, says a medical writer, shows itself by "a swelling of the feet and ankles towards the evening, which, for a time, disappears again in the morning. The tumefaction is soft and inelastic, and when pressed upon by the finger, retains its mark for some time, the skin becoming much paler than usual. By degrees the swelling ascends, and occupies the trunk of the body; and at last even the face and eyelids appear full and bloated; the breathing then becomes difficult, the urine is small in quantity, high colored, and deposites a reddish sediment; the bowels are costive, the perspiration is much obstructed, the coun-

* This is the spongy texture between the skin and the muscles.
† Ascites. ‡ Hydrothorax.

tenance yellow, and the thirst considerable. To these symptoms succeed torpor, heaviness, a troublesome cough, and a slow fever. In some cases the water oozes through the pores of the cuticle; in others it raises the cuticle in small blisters; and sometimes the skin, not allowing the water to escape through it, is compressed and hardened, and at the same time so much distended as to give the tumor a considerable degree of firmness."

1949. Patients who have been bled copiously, or salivated with mercury, are liable to this form of disease. The cells composing the cellular membrane become debilitated, and lose their elasticity, so that the water passes through them by the force of gravity, and descends to the inferior parts of the body, where it first accumulates. Hence the swelling of the feet and ankles, as mentioned in the preceding paragraph.

1950. TREATMENT. In a severe case of dropsy, it is necessary to administer courses of medicine, repeating them once or twice a week, as circumstances may require. This will invigorate the system, and increase the action of the absorbents, whereby the dropsical fluid will be discharged from the system through the appropriate channels, and its further accumulation prevented. The perspiration during each course, should be as profuse as possible; and the patient may advantageously remain for half an hour or an hour in the vapor bath, taking some stimulating tea internally, to keep a determination of blood to the surface of the body, and dashing a tumbler-full of cold water over his person occasionally, to prevent languor or faintness. Between the courses, the spiced bitters should be taken before each meal, with one or two doses of composition, or cayenne and bayberry, during the day. (1667.) Injections should be employed as long as costiveness prevails; and the skin should be rubbed briskly every night and morning with a coarse towel, or flesh brush. The diet should be light and nourishing, avoiding those articles of food which tend to constipate the bowels, or weaken the digestive organs. (1680, *et seq.*)

1951. Diuretics are useful in dropsy, because they increase the secretion of urine, and thereby diminish the amount of fluid in the system. Among these, are cleavers, juniper berries, and wild lettuce. (1227.) Dr. Thomson says he cured a patient by giving a tea of the wild lettuce, without any other remedy. Cool wort, though a good general diuretic, is of no service, I am told, in dropsy. I have found the following preparation to answer a very good purpose. Take of juniper berries, bruised or pounded, a table-spoonful; poplar bark, cayenne, bayberry, and scullcap, each a tea-spoonful; green lobelia, half a tea-spoonful, more or

less; boiling water a pint and a half. Steep, and sweeten to suit the taste. This tea may be kept warm by the fire, and the whole of it taken in the course of twenty four hours. Diuretics are uncertain in their effects, however, and unless they produce a free discharge of urine, should not be used.

1952. Four or five cayenne pills after each meal, will be found beneficial. (1301.) Advantage is also derived from the daily use of the vapor bath, between the courses, remaining in it for half an hour, or an hour, as previously mentioned, so that the patient may perspire freely. After the bath, the surface should be well rubbed with pepper sauce, vinegar and cayenne, (1531) or the stimulating liniment. In dropsy of the abdomen, it should be swathed with flannel, and moistened two or three times a day with pepper sauce, or some other stimulating wash.

1953. During convalescence, the hand bath (1455) should be employed, to prevent a relapse.

1954. If the abdomen is greatly distended with fluid, and there is no prospect of its removal through the medium of absorption, it is advisable, after two or three courses of medicine, to perform the operation of tapping.* Before this is determined upon, however, it should be ascertained whether there is any fluctuation, for if the enlargement of the abdomen is owing to any other cause than an accumulation of water, serious injury might be done to the intestines, or some other organ in the abdominal cavity. The usual mode of performing the operation, says Mr. Castle, is to place the patient in a high chair, with a pail between the knees, the operator sitting in a lower chair. A sheet is crossed round the abdomen, the ends of which are held by an assistant, who presses the sheet tightly on the abdomen. A puncture is now made with a lancet two or three inches below the navel, followed by the introduction of an instrument called a *canula*, to evacuate the fluid. There is no danger of wounding the intestines, because they are attached to the spine by the mysentery, (70) which confines them within certain limits. As soon as the lancet meets with no further resistance, however, remarks Dr. Cooper, it is not to be pushed more deeply, without any object, and with a possibility of injuring the viscera. If a canula is not at hand, a female bougie may be employed. The puncture is usually made with what is termed a *trocar*, but many surgeons prefer an ordinary lancet. As the fluid escapes, the abdomen should be tightly compressed with the sheet, or swooning and convulsions may arise. The canula should be moved about in

* Paracentesis abdominis.

various directions, to favor the escape of the fluid, and if the current suddenly stops, a blunt instrument should be introduced into the canula, to remove the obstruction. When the water is completely evacuated, the lips of the wound should be pressed together with the fingers, and retained in that position by strips of adhesive plaster, applied transversely. The abdomen should then be rubbed with pepper sauce, or rheumatic drops, and swathed rather tightly with flannel. This done, a course of medicine should be administered, to prevent the re-accumulation of fluid, and repeated as often as occasion may require.

1955. If the operation of tapping is performed a second time, the puncture should not be made in the same place, as the intestines sometimes form an adhesion at this point, and are in danger of being wounded.

DYSENTERY.

1956. This disease is dependent on an acute inflammation of the mucous membrane of the colon and rectum, and is known by the name of *flux*. It is often ushered in by a sense of lassitude, want of appetite, sickness at the stomach, and slight chills alternating with flushes of heat. These symptoms are succeeded by griping stools, which consist of mucus, or of mucus streaked with blood, and sometimes pure blood is discharged. The natural feces are either retained, or evacuated in small, round masses, denominated *scybala*. In some cases the stools resemble the washings of meat, and are highly fetid. The patient has a constant desire to go to stool, and is harrassed with an inclination to strain, which does not afford any relief. The skin is hot and dry, and the tongue covered with a white, or brown coat. As the disease advances, a fixed pain or soreness is felt in the bowels, which is increased by pressure. The thirst is more urgent, the fever more violent, the urine scanty and high colored, and the evacuations extremely offensive. There is also great diminution of strength. The liver is torpid or inactive, as is evinced by the absence of bile from the stools. The bowels are frequently distended with wind, so that on striking the abdomen, it sounds like a drum. Shreds or patches of false membrane are sometimes passed in the alvine discharges.

1957. "In protracted and unsubdued cases," says Dr. Eberle, "great prostration ensues; the pulse becomes small, corded, and very frequent; the countenance cadaverous; the abdomen tender, elastic, and sometimes flat; the skin harsh and shrunk; the breath offensive; the gums tender and swollen; the stools

liquid and dark colored; the extremities cold; and the surface of the body moist and clammy."

1958. Dysentery occurs most commonly in summer and autumn, and is produced by unripe fruits, indigestible food, obstructed perspiration, vitiated bile, and a variety of similar causes. In some instances it appears to depend on a peculiar state of the atmosphere, for we find it prevailing to a great extent in particular neighborhoods, without any other assignable cause. A medical writer says, "The disease is much more prevalent in warm climates than in cold ones; and in the months of August, September, and October, which is the rainy season of the year in the West Indies, it is apt to break out and become very general among the negroes on the different plantations in the colonies. The body having been rendered irritable by the great heat of the summer, and being exposed suddenly to much moisture, with open pores, the blood is thereby thrown from the exterior vessels upon the interior, so as to give rise to dysentery."

1959. TREATMENT. In the forming stage of the disease, it may be removed by the use of the dysentery sirup, or bayberry tea and rheumatic drops, as recommended in the treatment of *diarrhœa*. (1925.) If the disorder is fully established, however, and threatens to be severe, or obstinate, courses of medicine should be administered, repeating them every twelve, twenty four, or forty eight hours, according to the violence of the symptoms. This will counteract the undue determination of blood to the bowels, rouse the liver into action, and enable the skin to perform its functions in a healthy manner.

1960. Injections afford very great relief in this malady, and as there is a constant accumulation of acrid or offending matter in the bowels, they should be administered several times a day. They should be carefully strained, however, or the sediment may occasion tenesmus. (1568, 1573.) Where the bowels are cold or torpid, as frequently happens, each injection should contain a large tea-spoonful of cayenne.

1961. The vapor bath is also an important remedy, as it recals the blood to the surface, and tends to equalize the circulation.

1962. If the bowels are swelled, or tender on pressure, they should be bathed with rheumatic drops, or vinegar and cayenne; (1531) or a flannel moistened with either of these liquids, may be spread over the abdomen.

1963. The patient should be kept in a gentle perspiration between the courses, and for this purpose a heated stone wrapped in a damp cloth may be placed at the feet, and a free use made of the stimulating tea, (1515) rendering it mucilaginous with slip-

pery elm. The latter is particularly useful where the bowels are in a high state of irritation.

1964. The diet should be strictly guarded, or it may be difficult to effect a cure. (See remarks on *chronic diarrhœa* in paragraph 1926.) The patient should confine himself entirely to fluid nourishment, such as milk porridge, or the unbolted wheat meal gruel. (1424.) During convalescence, the dysentery sirup may be employed, together with the usual restorative medicines, taking care not to overload the stomach, or eat indigestible food.

1965. Among the simple remedies which are beneficial in dysentery, I would particularly mention the fleabane. (1104.) It has cured obstinate cases, even after they have been abandoned by the diplomatised physicians.

DYSPEPSIA OR INDIGESTION.

1966. This disease was scarcely known to our forefathers, but owing to our luxurious habits, and the evil tendency of the old school practice of physic, it is now one of the most fashionable maladies of the day. It usually commences in a slow and gradual manner, giving the first warning of its approach by an uneasy sensation in the stomach, especially after eating, accompanied with costiveness, thirst, cold hands and feet, and sometimes nausea and vomiting. These are succeeded by a long train of symptoms, such as nervousness, flatulency, heartburn, water brash, tenderness in the region of the stomach, chilliness, flushes of heat, difficult breathing, rising of wind in the throat, flatulent distention of the bowels, languor, despondency, palpitation of the heart, dizziness, headach, imperfect vision, and burning sensation in the hands and feet. The patient becomes restless, feeble, and emaciated. The slightest morsel of food often causes him severe distress, and he complains, not unfrequently, of pains darting from the stomach to the spine or back bone. The bowels are sometimes costive, and at others loose. The tongue is red in some cases, at others pale and glossy, and sometimes it is covered with a white, or yellow coat.

1967. Among the various causes of dyspepsia, bloodletting stands conspicuous. This fact is acknowledged by Professor Chapman of the Pennsylvania University, and by some others of the medical faculty. The food, it is well known, cannot be digested without the requisite supply of *gastric juice*, (85) and as this is a secretion from the blood, it must be diminished in proportion as the material is diminished from which it is derived. Hence the frequent occurrence of dyspepsia in those who have

been copiously bled. Among other causes of the malady, I may mention intemperance in eating, the use of spirituous liquors, very hot or very cold drinks, despondency, sedentary habits, and the use of medical poisons, particularly arsenic, antimony, aqua fortis, and the oil of vitriol, all of which are frequently employed by the diplomatised physicians.

1968. TREATMENT. Most cases of dyspepsia may be cured by close attention to diet, (1680, *et seq.*) exercise in the open air, (1709, *et seq.*) and the use of the hand bath every morning upon rising from bed. (1455.) The fine wheat bread should be entirely discarded as an article of food, and that made of the unbolted wheat meal used in its stead. (1181, *et seq.*) This will regulate the bowels, and procure natural stools, which is of the utmost importance in dyspeptic affections. For further information on this subject, see paragraph 1898, and those which follow, under the head of *costiveness*.

1969. No more food should be taken at a meal than will digest, no matter how small the quantity; or it will excite unpleasant sensations, and protract the period of recovery. Butter, and animal fats of every description, are injurious, and should be avoided. If the patient is not disposed to use the hand bath, as recommended above, he should not fail to rub himself every night and morning with a coarse towel, or flesh brush, until his skin is in a glow. The feet should be kept warm and dry, and the clothing regulated according to the season and climate. If food has been incautiously eaten which occasions distress, it should be immediately followed by a dose of spiced bitters, cayenne pills, or a tea-spoonful or more of rheumatic drops, in half a wine-glassful of sweetened water.

1970. In acidity of the stomach, it is a common practice to use alkalies, such as pearlash, and sal æratus, but these irritate the organ, and at best afford only temporary relief. The *bicarbonate of soda*, however, is less objectionable as an alkali, being free from irritating properties, and may be taken in the dose of a level tea-spoonful, dissolving it in a tea-cupful of warm water, or composition tea, when the stomach is extremely sour. The great object should be, however, to restore the stomach to a healthy tone, so that it will cease to generate acid.

1971. The spiced bitters may be taken two or three times a day, and a dose of composition, or cayenne and bayberry, at bed time. If the patient is not confined to the house, the bitters should be mixed with cold water, and taken in substance, (1247) unless the powder irritates the stomach. Composition prepared in the same way is also beneficial. (1243.) I have found the alter-

ative mixture (1526) to answer an excellent purpose in dyspeptic complaints.

1972. If the case is obstinate, or the health very much impaired, a few courses of medicine should be administered.

1973. The daily use of Ramadge's tube, as directed for consumptive patients, (1877, *et seq.*) has accomplished wonders in the treatment of dyspepsia. I am informed that a certain medical man, who professes to cure this malady, places his sole reliance upon the use of this tube, and charges twenty dollars for his advice, which he requires his patients not to reveal. However much I may be disposed to condemn this secresy, it is but just to say that his patients are generally cured.

EARACH.

1974. This is usually caused by inflammation in the ear, arising from exposure to cold; as a sequel of the measles, scarlet fever, or putrid sore throat, treated upon the antiphlogistic plan; or from the introduction of some foreign body into the ear, such as an insect, or a piece of stone, or glass. The pain is usually intense, and in some cases, convulsions have ensued. If the inflammation is not subdued, ulceration follows, succeeded by a discharge of yellowish, somewhat bloody, and very offensive matter. The small bones of the ear are sometimes involved in the ulceration, and fragments of them occasionally come away. This is more particularly the case where the system has been poisoned with mercury.

1975. Treatment. A dose or two of composition, and the application of heated stones wrapped in damp cloths to the feet and sides, so as to produce a perspiration, will often afford relief. Half a tea-spoonful of the warm infusion of lobelia, or an infusion of raspberry leaves, rendered slightly pungent with rheumatic drops, may be poured into the ear. The stimulating tea, (1515) containing, as it does, a small portion of lobelia, will generally allay the pain, if taken in the dose of a table-spoonful every five, ten, or fifteen minutes. Relief is often obtained by covering the head with a blanket, and holding it over a basin of water, into which heated stones are partially immersed to generate vapor; or a heated stone wrapped in a damp cloth, and wetted with vinegar, may be placed at the side of the head, in bed. The ear should be closed with a piece of raw cotton, moistened with rheumatic drops, or antispasmodic tincture, to exclude the air.

1976. Worms sometimes breed in the ear, causing a great

deal of distress, and in such case the ear should be syringed several times a day with a tea of raspberry, witch hazel, or any other mild astringent, adding rheumatic drops as they can be borne.

1977. In severe or obstinate cases of earach, it is advisable to administer a course of medicine.

EPILEPSY OR FALLING SICKNESS.

1978. In this disease, the individual falls down suddenly, and becomes convulsed, and insensible. In somes cases the attack occurs without any warning, but in others it is ushered in by premonitory symptoms, such as giddiness, ringing noise in the ears, dimness of sight, and confusion of ideas. Sometimes an attack is denoted by a creeping sensation in the feet and legs, resembling a stream or current of cold air, which rises suddenly to the brain, and is followed by a loss of sense and voluntary motion. I knew an epileptic patient who always experienced this sensation in his foot, just before being seized with the convulsions. By distending the affected limb, however, and pressing down forcibly upon the knee, he often succeeded in preventing a paroxysm.

1979. The fit may last only a few minutes, or it may be prolonged for an hour. In the meantime the body is convulsed, the face frightfully distorted, the breathing hurried and laborious, the tongue protruded, and a quantity of frothy saliva collected about the mouth. The eyes roll about wildly in their sockets, and at length become permanently fixed. The face is sometimes pale, and at others of a purple or livid color. The body is alternately stiff and relaxed. The tongue is often caught between the teeth, and severely wounded. In some cases, several fits succeed each other in rapid succession, and after the final paroxysm, the patient may return at once to consciousness, or he may continue in a drowsy or stupid state for several hours. In some instances, where the disease has been of long continuance, the convulsions are so violent as to terminate in death.

1980. The attacks usually occur at night, during sleep. The intervals at which they return, are various. The patient may have two or three paroxysms in a day, or he may not have more than that number in a year. If frequent, they injure or destroy the mental powers, terminating in some cases in complete idiocy.

1981. Among the causes of epilepsy, are, injuries about the head, use of alcoholic drinks, excessive venereal indulgence, vehement emotions, terror, dropsy of the brain, repelled cutaneous eruptions, worms, irritating substances in the bowels, painful teething, and suppression of the monthly evacuations.

1952. TREATMENT. During the epileptic fit, the patient should be prevented from injuring himself by his struggles; and if his tongue is protruded, a piece of wood, or roll of cotton, should be placed between the teeth, to prevent it from being wounded. The head and shoulders should be elevated, as in apoplexy, and every thing removed from the neck which is liable to compress the veins. If the patient is a female, her dress should be loosened about the waist. If the fit does not immediately subside, the antispasmodic tincture may be given in the dose of two or three tea-spoonfuls, and the same treatment pursued which is recommended under the head of *convulsions*. (1888, *et seq.*) Frictions of the skin with pepper sauce, or vinegar and cayenne, (1531) will also be beneficial.

1983. Epilepsy generally requires the administration of thorough *courses*, and these may be administered once a week, or oftener, attending meanwhile to the diet, (1680, *et seq.*) and other intermediate treatment. (1667, *et seq.*) The patient should eat the unbolted wheat bread, and subsist principally upon vegetable food, avoiding the use of fat meat, butter, pastry, and all unwholesome mixtures. (1706.) The stomach should never be overloaded, as this, alone, is sometimes the cause of an epileptic attack. If the bowels are costive, it will be necessary to administer an injection once a day. The cold bath, in some form or other, (1448, *et seq.*) should be used every morning, as this will serve to invigorate the constitution. The lobelia pills, scullcap, or alterative mixture, may be beneficially employed between the courses, as a part of the intermediate treatment. Wormwood tea, also, though disagreeable to people generally, is recommended by those who have tried it, as a valuable remedy.

ERYSIPELAS.

1984. Erysipelas or St. Anthony's fire consists of an inflammation of the skin, which appears in a blotch of a deep red or copper color, attended with more or less swelling, and a stinging or burning pain. These symptoms are usually preceded by lassitude, chills and heats, loss of appetite, sickness at the stomach, and pains in the head, neck, and back. The disease attacks all parts of the body, but is most common on the face, and extremities. The inflammation is at first confined to a small spot, but it gradually spreads to a greater or less extent over the surrounding surface; and cases are mentioned by medical authors in which it has covered the whole body. When the face is the seat of the malady, the symptoms are mostly violent. The features are often

much distorted, and the swelling so great as to close the eyelids. Drowsiness, and a tendency to delirium, not unfrequently arise. On the fourth or fifth day, blisters of different sizes make their appearance on the inflamed surface, containing a clear and watery fluid, which afterwards becomes of a straw color, and more or less glutinous. In twenty four or forty eight hours the blisters break, when the redness and swelling begin to subside, and the adjacent cuticle peels off in the form of scales.

1985. In unfavorable cases, the inflamed surface assumes a livid color, and the blisters are followed by obstinate ulcers. In some instances collections of matter take place between the skin and the muscles, which render the swelling soft and puffy, and when the matter is discharged, it has the appearance of small pieces of wet tow.

1986. Children and old people are more subject to erysipelas than individuals in the middle period of life. It attacks females more frequently than males. Sometimes it assumes the chronic form, and returns every few weeks, or months. It is produced by intemperance, living in damp places, sudden changes from heat to cold, and irritating substances applied to the skin. Dr. Hall says it is often the immediate effect of indigestible food. It frequently prevails epidemically, especially in hot seasons, and in a bad habit of body, is apt to terminate in gangrene.

1987. Treatment. In this, as in all diseases of the skin, we should keep a determination to the surface of the body. The bowels should be regulated with injections, and a tea of composition, or of cayenne and bayberry, administered to promote a gentle perspiration. The stimulating tea (1515) will answer a still better purpose. This, with a light vegetable diet, will be sufficient to cure mild cases of the disease ; but if the symptoms are violent, it will be necessary to give a course of medicine, repeating it, at proper intervals, until the disorder is removed.

1988. The inflamed surface may be bathed frequently with equal parts of sweet oil and the antispasmodic tincture, shaking them well together before the application is made ; or a piece of linen moistened with the liquid, may be laid upon the affected part, extending somewhat beyond the margin of the inflammation. This prevents the disease from diffusing itself over the adjoining surface. If the part is very hot and painful, it may be sponged occasionally with cold water, or cloths may be applied to it, as recommended for burns and scalds, (1813) and frequently wetted with cold water.

1989. If the blisters degenerate into ulcers, they should be poulticed with slippery elm, adding a portion of ginger, if it can be

be borne, and washing the sores at each renewal of the poultice with soapsuds, followed by a tea of witch hazel, pond lily, or some other mild astringent. If gangrene ensues, the yeast poultice (1548) may be advantageously applied, using, at the same time, the most active medicines internally.

EXCESSIVE FLOW OF URINE.*

1990. The urine discharged in this disease generally has a sweetish taste, and amounts in some cases to several quarts in a day. The thirst is urgent, the appetite voracious, the skin dry, and the stomach and bowels disordered. The tongue is sometimes red, and at others covered with a white coat. The patient is frequently troubled with heartburn, flatulency, oppression at the stomach after eating, cold extremities, headach, and pain and weakness in the loins. The copious discharges of urine are soon followed by great debility, and emaciation. The memory is sometimes impaired. In the latter stages of the complaint the gums become spongy, and the breath offensive, accompanied by difficulty of breathing, and swelling of the feet and legs. The malady has been known to continue for many years, although it frequently destroys the patient in a few weeks. It is chiefly confined to cold, damp climates, and is produced by gravel, venereal excesses, checked perspiration, and the use of cantharides, and digitalis.

1991. It is an admirable law of the animal economy, that where one organ ceases to perform its function, another immediately takes its place. For example, an individual may pass two or three hours at an evening party, without any desire to evacuate the bladder, because during that time, the skin is warm and active, but as soon as he goes into the cold air, a check is given to the perspiration, and he experiences an urgent desire to pass water. Thus it is with the disease under consideration. The skin becomes inactive, and the perspirable matter which should pass off through the pores, is retained in the circulation, but by an increased action of the kidneys, it is discharged from the system. In warm climates, such as the West Indies, the disease is scarcely known, because the skin is not so liable to obstruction as in colder climates.

1992. TREATMENT. Medicines should be given to produce a perspiration, as this is the most effectual mode of controlling the

* Called in medical language, *diabetes*.

flow of urine. A tea of cayenne and bayberry, injections, the vapor bath, and emetics, may all be used according to the urgency of the case. If the disease is obstinate, courses of medicine will be required, and in the interval the spiced bitters, or some other tonic, should be freely employed to strengthen the digestive organs and invigorate the general system. Diuretics (1227) are also indispensable, as they serve to increase the tone of the kidneys. I would particularly recommend the diuretic tea. (1516.) The diet should be regulated, (1680, *et seq.*) and the skin well rubbed every night and morning with a coarse towel, or flesh brush.

FAINTING.

1993. Fainting or swooning mostly comes on suddenly, and is occasioned by loss of blood, violent emotions, severe pain, disorder of the stomach and bowels, tight lacing, impure or confined air, poisonous gases, and a variety of other causes. The heart is weakened in its action, and does not propel the blood to the surface; hence, the countenance becomes pale, and the extremities cold. The attack is often preceded by giddiness, and confusion of ideas, and occasionally terminates in vomiting.

1994. TREATMENT. The individual should be placed in a recumbent position, so as to favor the return of blood to the brain, and in most cases he will regain his consciousness in two or three minutes. His face may be sprinkled with cold water, a free current of air admitted to his person, and strong vinegar, tincture of camphor, or smelling salts applied to his nostrils. If the patient is a female, the dress should be loosened about the waist. If the recovery is protracted, the same routine of treatment may be employed which is recommended for *suspended animation*. See index.

FALLING OF THE FUNDAMENT.

1995. This is a protrusion or falling of the inner membrane of the rectum, from debility or relaxation of the parts. It is more troublesome than dangerous, and has become very common since the introduction of Brandreth's pills. It is often to be met with in children. The use of purgatives greatly increases the difficulty, so that the slightest straining will cause a protrusion; and if the part is not returned in due season, it will become painful, swollen, and inflamed.

1996. TREATMENT. The loose membrane will sometimes return without artificial assistance; but if this is not the case, it should be pushed up gently with the fingers, previously smearing them with lard, or sweet oil. Washing the part with a warm tea of raspberry, witch hazel, or sumach leaves, will prove of service. In severe cases, it may be necessary to administer the vapor bath and an emetic, before the membrane can be replaced.

1997. Injections two or three times a day will be found useful in this complaint, as they strengthen the debilitated parts; and special care should be taken to obviate costiveness. (1896, *et seq.*)

FELON AND WHITLOW.

1998. A *felon* has its seat in the periosteum or membrane which covers the bones, and usually makes its appearance about the finger joints. A *whitlow* is similar to a felon, but is not so deeply seated. It is formed under the skin, but does not extend to the bone. It is often situated at the root of the finger nail, and is familiarly termed a *run-round*.

1999. TREATMENT. Felons and whitlows are both very painful, inasmuch as the skin does not readily yield to the swelling. It is necessary therefore, to give vent to the pus or matter by an incision with a lancet, cutting down to the part affected; and this is particularly desirable in felons, as the bone may become diseased, and the finger joint be destroyed. Instead of an incision with a lancet, Dr. Thomson recommends the following plan of treatment, a knowledge of which he derived from the Indians. Take a piece of punk the size of a pea, and burn it on the affected part, covering the other portions of the finger with a cloth or napkin wetted with cold water. The burning may be repeated, if necessary; and the pain, it is said, is very slight. As soon as the vitality of the skin is destroyed, it is to be punctured with a needle, slightly elevated, and a small portion of it cut away, so that the pus may escape. This accomplished, the elm and ginger poultice (1543) may be applied as in any other sore.

2000. Those who prefer that a felon or whitlow should take its course, without having either of the above trivial operations performed, may subdue the pain in some measure by the application of poultices, containing a portion of cayenne and lobelia, which will soften and relax the skin, and enable it to yield more readily to the swelling. At the same time the stimulating tea (1515) should be taken internally, to quiet the nerves, and keep up a gentle perspiration.

FRACTURES.

2001. When a bone is broken, it is termed a fracture, and it may be either *simple* or *compound*, according to the nature of the accident. "If the bone is broken in two or more pieces," says Sir Astley Cooper, "and there is not an external wound communicating with the fractured ends of the bone, the fracture is still called *simple;* on the other hand, if the bone is broken in but one place, and there is an outward wound, the accident is called a *compound* fracture. Large wounds may occur at the same time with fractures, but unless these communicate with the bone, they are not called compound fractures.

2002. "Fractures are, likewise, said to be *complicated*, when they are attended with diseases, or accidents, which render the indications in the treatment more numerous, and require sundry operations for the accomplishment of the cure. Thus, fractures may be complicated with severe degrees of contusion, wounds of the soft parts, injury of large blood-vessels, a dislocation, or diseases, and particular states of the constitution, as the scurvy, and rickets, which are said to retard the formation of callus, and render the cure more backward."

2003. Fractures are also distinguished into *longitudinal*, *transverse*, and *oblique*, according to the direction in which they run.

2004. Bones sometimes break without any assignable cause, as happens now and then in particular diseases, and when they become brittle or rotten from the effects of mercury. I saw a patient in the Massachusetts General Hospital, who broke his thigh bone by simply turning in bed.

2005. When a bone is fractured, it is indicated by pain, swelling, more or less distortion, and a grating sound when the broken ends are rubbed together. This crepitus or grating however, is sometimes heard in dislocations, as mentioned heretofore. (1927.) If the accident happens to one of the extremities, the individual loses his control over the limb. If the thigh bone is broken, the contraction of the muscles is so great that the limb becomes almost immediately shortened, but in the leg, or forearm, where there are two bones, and only one of them fractured, shortening does not take place, because the sound bone keeps up the necessary degree of extension.

2006. "The symptoms of fractures," says Dr. Samuel Cooper, "are exceedingly various, according to the bones which are broken; and though most writers have indiscriminately mentioned loss of motion in the injured limb, deformity, swelling,

tension, pain, *etc.*, as forming the distinguishing marks, yet it is apparent to any one acquainted with the structure of the body, that fractures cannot always prevent the motion of the part, or occasion outward deformity; and every surgeon must know, that though at first there may be pain in the situation of a fracture, no swelling and tension take place till after a certain period. When therefore a limb is broken, and the event is not manifest from the distortion of the part, it is proper to trace with the fingers the outlines of the suspected bone, and whenever any unusual pain occurs, or any unnatural irregularity appears, to try if no grating or crepitus can be felt on endeavoring to make one end of the bone rub against the other. When the thigh, or arm bone is the subject of injury, a crepitus is felt almost as soon as the limb is touched, and in case of the thigh, there is considerable shortening of the extremity, unless the fracture be of the transverse kind. But when there are two bones, as in the leg, and forearm, and any one is broken, the other continues to prevent the limb from being shortened and thrown out of its natural shape, so that a crepitus can only be felt by a proper examination with the fingers. I am aware that considerable harm, and great unnecessary pain, have been occasioned in the practice of surgery by an over-officious care to feel the grating of fractured bones, and whenever the case is sufficiently evident to the eyes, I cannot refrain from censuring those practitioners who indulge their ill-judged habits at the expense of torture to the unfortunate patient. A fracture is an injury which is necessarily attended with considerable pain, and followed by a great deal of tension, and to increase these evils by rough handling of the part, is above all things cruel.

2007. "In cases of fractures, the muscles of the limb are often affected with involuntary spasms, which put the patient in great pain, and when the thigh bone, arm bone, or both bones of the leg, or forearm are broken, occasion great distortion while the violence of the spasm continues."

2008. The plan which nature adopts in repairing a broken bone is this. In four or five days after the accident, matter is thrown out from the fractured ends, which is soft and of a jelly-like consistence at first, but gradually hardens into bone, and unites the two ends firmly together. The new bone forms an enlargement at the point of union, and is termed a callus. The time required for bones to unite, is influenced by circumstances. In children the union is more speedy than in adults. The usual period, however, is from three to five weeks. If the health is much impaired, the process is retarded, and in the practice of the diplomatised physicians, a year has elapsed without any union

taking place. The limb must be kept perfectly still, especially after the expiration of four or five days, or the matter which is thrown out, will fail to cement the fractured ends.

2009. The method of relaxing the muscles previous to setting a bone, or in other words, bringing its fractured ends into contact, is precisely the same as that recommended in the treatment of *dislocations*, to which the reader is referred. (1993.) By pursuing this plan, the bone may be restored to its natural position with comparative ease, and with but little pain or suffering to the patient.

2010. The ends of the broken bone being restored to their natural situation, the limb, as I have said, should be kept at rest until a union takes place, selecting that position in which there is the greatest relaxation of the muscles which would be most likely to displace the bone. "The position which relaxes the *flexor* muscles, however," says Dr. S. Cooper, "has quite an opposite effect upon the *extensors*. * The answer is, that no posture will completely relax every set of muscles, in every instance; and in this case, the joints must be placed in the middle state, between perfect flexion and perfect extension, as in this manner, though complete relaxation is not effected, most of the muscles will not be in the state of tension. When, however, every muscle having the power to displace a fracture can be relaxed, the others, which have no power over the progress of the case, may be neglected, and the posture determined accordingly. Thus, in fracture of the thigh, where we cannot perfectly relax every muscle capable of disturbing the fracture, we place the hip and knee joints in the mid state between perfect flexion and extension; in the fracture of the patella, where we can relax every muscle which can resist the object of the surgeon, we regulate the posture without any regard to muscles which have no influence over the fracture."

2011. The fractured limb is usually encased in thin, narrow pieces of wood or splints, extending beyond the two joints nearest the fracture, and fastened with tape, or strips of linen, interposing some soft substance between the wood and the skin, to prevent the latter from being chafed. Raw cotton, or soft padding of any description, will answer the purpose. The number of splints must vary according to the size of the limb. Two are generally sufficient for the arm, and three or four for the thigh. Thick pasteboard softened in water, is sometimes used, and when it becomes dry, forms a very solid casing. It has the advantage of being easi-

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* The *flexor* muscles *bend* a limb, and the *extensors straighten* it. See paragraph 24.

ly moulded to the limb. A box open on one side is sometimes employed to keep the limb in its requisite position.

2012. In an oblique fracture, the two surfaces of the broken bone should be kept closely in contact, or the ends may overlap in consequence of the contraction of the muscles, and produce a permanent shortening of the limb.

2013. "Oblique fractures," says Sir Astley Cooper, "are more troublesome, and difficult of cure, than transverse ones, because an oblique surface does not resist the retraction of the lower portion of the broken bone; and consequently, it is very difficult to keep the ends of the fracture duly applied to each other. When the callus has acquired some firmness, the patient should still keep the part or limb quiet, until the union is perfectly consolidated. In fractures of the lower extremities, even after the union has proceeded so far that the splints admit of being left off, the patient ought not to venture out of bed, or bear upon the limb, till several more days have elapsed."

2014. The treatment of a *compound fracture*, says Dr S. Cooper, is similar to that of a simple one, excepting that a more rigorous attention to quietude is necessary on the part of the patient, and more vigilant care on the part of the surgeon. The limb must, as in the simple fracture, be placed in a relaxed position; the fracture, if displaced, must be reduced as speedily as possible, the lips of the wound brought into contact with adhesive plaster, and the limb secured with splints, as already directed. If pieces of bone are discovered, they should be carefully removed. If the wound becomes hot and painful, it should be wetted occasionally with cold water, which will prevent an undue flow of blood into the vessels of the injured part. (1942.) The rheumatic drops, or tincture of balm of Gilead buds, (1039) either pure, or diluted with water, may be applied several times a day with great advantage. In the event of suppuration—that is, the formation of matter—poultices must be employed, as in any other wound or sore, taking care not to disturb the fracture any more than can be avoided.

2015. If an important artery is wounded, it must be secured with a ligature, which cannot be accomplished very well excepting by those who are acquainted with the anatomy of the parts, and possess an adequate degree of surgical knowledge. Sir Astley Cooper says, "it was formerly the practice to amputate in compound fractures, whenever any vessel of importance was wounded, under the supposition that the injury could not be repaired, and that gangrene would in all probability happen; but I have seen so many limbs saved, even when the principal artery going to the

limb has been torn, that I am induced by experience to adopt a different plan."

2016. If a bone protrudes through the soft parts, and is covered with dirt or gravel, it should be washed clean before it is replaced.

2017. While the bone is uniting, the process should be aided by a careful attention to the health, for if the body is diseased, recovery from the injury will be more or less retarded. The diet should be light, and easy of digestion, and medicines employed according to the nature or urgency of the symptoms. If proper treatment was resorted to in cases of fracture, many a limb would be saved which is now amputated by the surgeon. Composition tea should be given sufficiently often to keep the skin moist, and maintain the equilibrium of the circulation. This will allay the pain in the injured part, and prevent the developement of inflammation; or if it should be insufficient, the stimulating tea (1515) may be employed. The latter is also particularly beneficial in case of any spasmodic action of the muscles. If the stomach is disordered, it should be cleansed with an emetic of lobelia; or it may be necessary to administer a thorough course of medicine. If the bowels are confined, injections should be given. I would advise the patient to make use of the unbolted wheat bread, or wheat jelly, (1435) as an article of diet.

2018. With regard to amputation, it is frequently resorted to unnecessarily, and almost as frequently contributes to a fatal termination. Dr. Warren, professor of surgery in Harvard University, remarked, in one of his lectures, "it has been frequently stated, that out of *fifty* amputations in one of the greatest hospitals in Paris, *forty eight* proved fatal. I doubted this assertion, and took occasion when in Paris, to make enquiry of persons connected with the hospital, on the subject, and every one told me the same story." Amputation, therefore, appears to be a dangerous experiment; whereas if proper treatment were instituted, so as to prevent any sinking or prostration of the vital powers, the life of the patient, as well as the injured limb, would generally be saved.

GIDDINESS OR VERTIGO.

2019. Whatever disturbs the balance of the circulation, has a tendency to produce giddiness; hence it may result from too great a quantity of blood in the head, as in inflammation; or from a deficiency, as in hemorrhage, or depletion by the lancet. Among its exciting causes may be enumerated intemperance in eating, drunkenness, a costive state of the bowels, and excessive indulgence in sexual intercourse. It is likewise produced by looking

down from a great height; by the motion of a ship at sea; by running round for some time in a circle; and in some instances, by suddenly rising out of a recumbent posture.

2020. TREATMENT. Relief may be generally obtained by the use of composition to equalize the circulation, and spiced bitters, or some other tonic, to invigorate the digestive organs. If the stomach is much disordered, an emetic of lobelia will be necessary. If the malady is connected with a costive state of the bowels, as is generally the case, an injection once or twice a day will be particularly serviceable. (See treatment in *costiveness*—1896, *et seq.*) The skin should be rubbed night and morning with a coarse towel, or flesh brush, the diet regulated, (1680, *et seq.*) and tea, coffee, rich gravies, superfine flour bread, butter, and all animal fats, scrupulously avoided.

GONORRHŒA.

2021. Gonorrhœa or clap is an inflammation of the urethra, which arises in from one to fifteen days after impure sexual intercourse. It commences with an itching or tingling sensation in the part, followed by burning or scalding pain on passing water, and a discharge of thin, whitish matter, which gradually increases in quantity, becomes more thick, and assumes a yellow, or greenish color, being occasionally streaked with blood.

2022. The individual is tormented with painful erections, especially at night, while in bed, and the penis is sometimes drawn into the form of a curve, which surgeons distinguish by the name of *chordee*. The pain in such case is very severe, and is occasionally attended by a discharge of blood.

2023. The disease is generally local, being limited to an inch, or an inch and a half of the urethra, but sometimes it extends to the bladder, which becomes very sore or irritable, and the water is passed in a small stream, or perhaps in drops, causing the most acute pain and suffering. The testicles and groins are liable to swell, and become inflamed, attended by an uneasy or burning sensation in the rectum.

2024. In consequence of inflammation, the prepuce or foreskin often becomes so swelled that it cannot be drawn back; or if drawn back, may become constricted so that it cannot be returned, forming a tight ligature round the penis.

2025. The disease is generally much less severe in females than in males. Indeed, the former often experience no other than a slight inconvenience. A woman afflicted with fluor albus, is

sometimes supposed to have gonorrhœa, and instances occur in which she communicates a similar disease to her husband, who may entertain an unjust suspicion of her virtue. "The surest way," says a medical writer, "of forming a correct conclusion, in instances of this nature, will be to draw it from an accurate investigation, both of the symptoms which are present and those which have preceded the discharge; as likewise from the concurring circumstances, such as the character and mode of life of the person, and the probability there may be of her having had venereal infection conveyed to her by an illicit connexion."

2026. When gonorrhœa is treated in an improper manner, it is often followed by a thin, slimy discharge from the urethra, which has received the name of *gleet*. The discharge may continue for months, and even years. It does not only arise as a sequel of gonorrhœa, but is excited by injuries, and a too free indulgence in sexual intercourse.

2027. TREATMENT. Gonorrhœa, in the forming stage, may often be cured by taking a dose of spiced bitters three or four times a day, and a tea-cupful of strong bayberry tea at bed time. A tea-spoon-ful of rheumatic drops should be added to each dose of the medicine. The diet should be light, and easy of digestion, consisting principally of vegetable food. Beer, wine, and alcohol in all its forms, must be avoided. If the bowels are confined, they should be regulated according to the directions under the head of costiveness. (1896, *et seq.*)

2028. Dr. Comfort of Philadelphia, recommends the following plan of treatment, which, he informs me, will usually effect a cure in six or eight days. Take of bayberry four table-spoonfuls ; the dust or powder of sumach berries one table-spoonful ; cayenne a tea-spoonful and a half ; mix, and take a large tea-spoonful of the powder three or four times a day, steeping it in a tea-cupful of boiling water, and adding sugar to suit the taste. Ten, fifteen, or twenty drops of the tincture of lobelia should also be taken every hour or two during the day, on loaf sugar.

2029. The alterative mixture (1526) is useful in gonorrhœa, and will sometimes effect a cure without any other remedy. As much of it should be taken as possible, without producing an unpleasant degree of nausea.

2030. Injections into the urethra before the inflammation becomes very active, or after it has been subdued, will be found of signal benefit. They may consist of an infusion of raspberry, witch hazel, sumach, or any of the astringents, rendered pungent by the addition of rheumatic drops. They should be milk warm, and administered immediately after passing urine. (813.)

2031. The parts should be washed once or twice a day, so as to keep them perfectly clean, and care must be taken that the matter discharged does not come in contact with the eyes.

2032. The *chordee*, as it is termed, may be greatly relieved by drinking freely of scullcap tea, or a tea of composition containing a small portion of lobelia.

2033. In swelling and inflammation of the penis, testicles, or groins, a local application of vapor should be made in some convenient manner, and the parts, excepting those which are particularly sensitive, bathed with the volatile liniment, or other stimulating wash. (1499.)

2034. It is not necessary to administer a course of medicine in this disease, unless the health is very much impaired.

2035. In the treatment of females, injections per vaginam should be employed three or four times a day. They may be prepared as already directed, or consist exclusively of bayberry tea. The latter answers an excellent purpose.

2036. The treatment recommended in gonorrhœa, is equally applicable in *gleet*. In the latter disease, injections into the urethra are particularly demanded.

GOUT.

2037. This disease comes on in fits or paroxysms, and sometimes without any warning, but in most cases its approach is denoted by precursory symptoms, such as imperfect digestion, acidity of the stomach, heartburn, flatulency, a confined state of the bowels, drowsiness, numbness of the limbs, feverishness, debility, and lowness of spirits. The attack generally commences with a pain in the ball of the great toe, or some other part of the foot, followed by a hot and dry skin. The pain increases in severity, and in a few hours the foot and lower part of the limb become swollen and red, with considerable distention of the veins. The tenderness is so great that the patient can scarcely bear the weight of the bed-clothes. There is high fever, loss of appetite, pain and disorder of the bowels, burning sensation in the stomach, and sometimes nausea and vomiting. The tongue is either red, or covered with a white, or yellow coat.

2038. The attacks usually occur in the spring, or beginning of the winter, and at first are generally a year or more apart, but as the disease advances, and the constitution becomes impaired, they are much more frequent.

2039. When a paroxysm terminates, the skin covering the affected part occasionally peels off. In some instances the dis-

ease disappears from one foot and is suddenly transferred to the other.

2040. The gout may also attack the knee, hand, wrist, elbow, and shoulders, and in some cases it recedes from the foot, and fixes itself upon some internal organ, such as the brain, heart, stomach, bowels, or kidneys, giving rise to various, and oftentimes alarming symptoms.

2041. The gout rarely attacks the young. Dr. Hall says, "it affects the male sex, and the intemperate principally, but by no means exclusively. It is generally dependent on a deranged state of the system, and especially of the stomach and bowels; and frequently attends acute or protracted dyspepsia." Indolent habits, luxurious living, and a free indulgence in wine and other fermented liquors, are fruitful sources of the malady.

2042. *Chronic gout*, as it is termed, is usually the result of injudicious medical treatment. It consists, says Dr. Hall, who should be regarded as very good authority in this matter, "of permanent pain, swelling, weakness, deformity, and distortion of the parts which have been repeatedly the seat of the acute disease, and especially of the hands and feet. There is great derangement of the digestive organs, accompanied with a dry and sallow skin, irritable temper, and more or less debility and emaciation.

2043. Sydenham, speaking of the gout, remarked, "What is a consolation to me, and may be to other *gouty* persons of small fortunes and slender abilities, is, that kings, princes, generals, admirals, philosophers, and several other great men, have thus lived and died. In short, it may, in a more especial manner, be affirmed of this disease, that it destroys more rich than poor persons, and more wise men than fools."*

2044. TREATMENT. In a paroxysm of the gout—as it is generally preceded by an affection of the stomach, and more or less disorder of the general system—we should administer a course of medicine, which will seldom fail to subdue the urgent symptoms, and relieve the patient of his sufferings. The affected part may be bathed frequently with rheumatic drops, antispasmodic tincture, or a mixture of vinegar and cayenne; (1531) or a flannel moistened with either of these liquids may be applied to the part. After the course, the composition and spiced bitters may be used several times a day, according to the necessity of the case, and an injection given every twelve or twenty-four hours, to regu-

* Marshall Hall's Practice of Medicine.

late the bowels. If the patient is nervous or irritable, a tea of scullcap, or lady's slipper, containing a small portion of cayenne, will be beneficial. Wine, brandy, and all alcoholic drinks, must be scrupulously avoided. The diet should be light and chiefly vegetable, always including the unbolted wheat bread as an article of food. (See *diet* 1680, *et seq.*) The skin should be rubbed every night and morning with a flesh brush, or coarse towel; and the hand bath should also be used. (1455.) It may be necessary to repeat the course several times, before a cure is effected.

2045. In mild cases of gout, relief may be often obtained by the use of the stimulating tea, (1515) giving it until perspiration ensues.

2046. The alterative mixture is beneficial in the intermediate treatment of this disease.

2047. If the feet or hands are swelled, the Indian meal poultice, or a fomentation of burdock, or mullein leaves, (1061, 1135) may be applied. The local application of vapor, rubbing the part afterwards with rheumatic drops, or vinegar and cayenne, as mentioned above, and wrapping it in a flannel moistened with the same, will aid essentially in reducing the swelling and inflammation.

GRAVEL AND STONE.

2048. By gravel is understood those small, sand-like concretions, which form in the kidneys, and pass through the ureters into the bladder, causing acute pain in the loins, numbness of the thighs, and a retraction or drawing up of the testicles. The pain is increased by exercise. Fainting and vomiting are sometimes present. There is a frequent desire to pass water, which is small in quantity, and generally of a red color. It mostly deposites a brown or red sediment on standing. The gravel at length makes its way into the bladder, and is discharged with the urine, which, for the time, terminates the patient's sufferings.

2049. The gravel sometimes lodges in the urethra, which may be known by acute pain in the part, and retention of urine. Previous to the swelling and inflammation which are apt to arise, the stone may be felt by compressing the penis.

2050. *Gall stones* are hard bodies of various sizes which form in the gall bladder. It does not appear that they cause any trouble or uneasiness, as a general thing, unless they pass into the duct leading from the gall bladder to the duodenum, (see Fig. 1, page 15,) and then they occasion the most excrutiating pain.

2051. By *stone* is understood a concretion in the kidneys, or

bladder, identical with gravel, but so large that it cannot be discharged from the body without very great difficulty; and sometimes its dimensions are such as to put this entirely out of the question.

2052. When a stone exists in the bladder, it is attended with tenesmus, a frequent desire to pass water, an uneasy sensation in the head of the penis, and severe pain in the lower part of the abdomen. The urine is sometimes mixed with blood, and mucus. It often comes away in drops, but if it flows in a full stream, it is apt to be suddenly checked. The greatest pain is always experienced immediately after the discharge of urine.

2053. It is remarked by medical writers, that the gravel rarely terminates in stone.

2054. These painful maladies usually attack individuals in the decline of life, and are intimately connected with disorder of the digestive functions. They rarely prevail in warm climates, and do not often trouble those who exercise in the open air, and avoid a luxurious and sedentary life. This is remarkably exemplified in the case of a merchant of one of the Hanseatic towns, related by Magendie. The merchant in question "was possessed of a considerable fortune, and in 1814 lived in an appropriate style, keeping a very good table, of which he himself made no sparing use. He was at this time troubled with the gravel. Some political measures unexpectedly took place, which caused him the loss of his whole fortune, and obliged him to take refuge in England, where he passed nearly a year in a state bordering upon extreme poverty, which obliged him to submit to numberless privations; but his gravel disappeared. By degrees he succeeded in establishing his affairs; he resumed his old habits, and the gravel very shortly began to return. A second reverse occasioned him once more the loss of all he had acquired. He went to France almost without the means of subsistence, when his diet being in proportion to his exhausted resources, the gravel a second time vanished. Again his industry restored him to comfortable circumstances; again he indulged in the pleasures of the table, and had to pay the tax of his old complaint."

2055. Gravel and stone are formed from the impurities or sediment of the urine, which, like the blood, and other fluids of the body, becomes unhealthy in consequence of a disordered state of the general system.

2056. Treatment. Diuretics and mucilages may be freely and usefully employed in these complaints. Of the former, I would particularly recommend cool wort. The tincture of fir balsam may be taken in the dose of a tea-spoonful three times a day,

with more or less benefit. I have found the following preparation to be one of great value. Take of poplar bark, scullcap, and the dust or powder of sumach berries each a tea-spoonful; green lobelia half a tea-spoonful; cool wort a handful; boiling water a quart. Steep in a covered vessel, strain, add two tea-spoonfuls of powdered slippery elm, and sweeten to suit the taste. This tea may be drank freely during the day, keeping it warm by the fire. It allays the pain which is experienced in passing water, and has a soothing influence upon the whole system. The patient, in the meantime, should not expose himself to a cold or damp atmosphere.

2057. The excessive pain which is caused by the passage of gravel from the kidney to the bladder, may be relieved by the vapor bath, and an emetic of lobelia. Injections containing lobelia are also important. If the case is urgent, a full course of medicine should be given. Flannels wrung out of hot rheumatic drops, or a mixture of vinegar and cayenne, (1531) may be applied externally to the region of the pain, together with a heated stone or bottle of hot water wrapped in a damp cloth. The lobelia is particularly useful, because, by its relaxing influence, it diminishes the pain, and facilitates the passage of the gravel. The same treatment is requisite in case a gall stone is lodged in the gall duct; and the mechanical action of vomiting aids essentially in promoting its discharge into the intestines.

2058. The practice of injecting fluids into the bladder to dissolve the stone, is now generally abandoned, for it was found, with a few exceptions, to be unsuccessful, and often occasioned irritation, or inflammation of the organ. The stone may attain a large size without necessarily proving fatal, or even causing any inconvenience, provided the individual is careful of his diet, and adopts the necessary precautions to keep his system in a healthy and vigorous state.

HEADACH.

2059. Headach is produced by a variety of causes, such as severe study, menstrual irregularities, disorders of the womb, a determination of blood to the head, and a deranged condition of the stomach and bowels. Persons often complain of it after a profuse diarrhœa, or excessive depletion by the lancet. In females, it is frequently occasioned by costiveness. If headach arises a short time after eating, we usually refer it to disorder of the stomach, but if not until an hour or two has elapsed, we infer that it is caused by an affection of the bowels. The pain may be

either dull, vehement, or throbbing. Sometimes every part of the head is affected, while at others the pain is confined to the forehead, side of the head, or perhaps to a still more circumscribed portion. The most distressing form of the disease, is what is termed *sick headach*, which not unfrequently harrasses the patient for many years, and at last terminates in death. It comes on in paroxysms, which last from two to twenty four hours, and are sometimes accompanied with vomiting.

2060. TREATMENT. Relief may be often obtained by sitting near the fire, covered with a blanket, and taking composition sufficient to produce a perspiration. If the bowels are costive, an injection is indispensable. The digestive organs should be strengthened by spiced bitters, or some other tonic, taken two or three times a day; and if the system is cold, chilly, or inactive, cayenne and bayberry should be employed, particularly at bed time.

2061. One of the best remedies, however, is an emetic of lobelia, which will generally afford entire relief, unless the disease is obstinate, or of long standing, and then a few courses of medicine will be required.

2062. The headach snuff is serviceable in many instances.

2063. Where headach is the result of costiveness, the remedies should be employed which are recommended under that head. (1896, *et seq.*)

2064. *Sick headach* may generally be cured by a regulated diet, and the use of the hand bath every morning. (1680, *et seq.*) I have adopted this treatment in a great many cases, and never knew it to fail in producing the desired results. I may further add, that I never knew an individual who subsisted entirely upon vegetable food, and bathed himself every morning in cold water, to be troubled with the malady.

HEARTBURN.

2065. This consists of a distressing and gnawing pain in the stomach, accompanied with sour eructations, nausea, and sometimes fainting. It is a common symptom of dyspepsia. The food being imperfectly digested, it gives rise to a superabundance of acid in the stomach, together with an accumulation of wind. Some women suffer almost constantly with the heartburn during pregnancy, but it generally disappears soon after delivery. It is caused by improper food, overeating, very hot or very cold drinks, fat meat, butter, cheese, wine, ardent spirits, and whatever produces weakness or disorder of the digestive organs.

2066. TREATMENT. Besides temperance in eating and drinking, regularity in meals, and the selection of food that will not oppress or irritate the stomach, all of which are highly important, a cure is to be effected by the use of spiced bitters, or some other tonic, two or three times a day, and a dose of composition, or cayenne and bayberry, on going to bed. Slippery elm, or any other mucilage, is soothing to the stomach, and may be used freely. The alterative mixture may be employed with great advantage in heartburn. Alkalies are sometimes used to give temporary relief, but they do nothing towards accomplishing a permanent cure. (1970.)

HIP DISEASE.

2067. The seat of this painful affection is in the cup-like cavity or socket which receives the head of the thigh bone. It is caused by local injuries, the use of mercury, and exposure to cold. It is common to children under fourteen years of age, and often arises in persons of a scrofulous habit. It usually comes on very gradually, beginning with slight debility and soreness in the joint, especially after a long walk. Considerable pain, or uneasiness is felt in the knee, even before an affection of the hip is suspected. As the disease advances, the hip becomes excessively painful, and the pain is increased by the slightest movement of the limb, or by pressure over the affected joint. The leg and thigh begin to waste away, and the buttocks lose their rounded form, becoming more or less flattened. At first there is a remarkable lengthening of the limb, but after awhile it becomes shorter than the other, having the toes turned inward. Sometimes there is a painful twitching of the muscles, but this is not a common symptom. If the inflammation is not arrested in season, suppuration may ensue, causing a destruction of the bones and cartilages, and terminating in distortion and incurable lameness.

2068. It is said of the late Professor Physic, that he would never undertake to treat a child with hip disease, unless he could previously obtain the consent of its parents to keep the limb perfectly still in splints until a cure was effected, which generally required, according to his own acknowledgment, from a year to eighteen months. Comment is unnecessary.

2069. TREATMENT. Where the disease has not been aggravated by improper management, such as leeching, blistering, cupping, and the use of mineral, or vegetable poisons, it may generally be cured by one or two courses of medicine, together with appro-

priate *intermediate treatment.* (1660, *et seq.*) Composition, spiced bitters, and the alterative mixture, may all be usefully employed. In an obstinate form of the malady, a succession of courses will be required, repeating them once or twice a week, according to the exigencies of the case. Where the limb is much wasted, it should be bathed several times a day with the stimulating liniment, pepper sauce, or tincture of cayenne, and kept warm by the application of heated stones or bottles of hot water wrapped in damp cloths. If the pain is severe, the hip should be rubbed frequently with either of the preparations just named; or a flannel wrung out of hot rheumatic drops, or a mixture of vinegar and cayenne (1531) may be laid over the affected joint. If there is painful twitching of the muscles, relief may be obtained by using scullcap tea, containing a small portion of cayenne. The daily application of vapor to the hip and lower extremities, by means of a blanket passed round the waist, will be highly serviceable, and after the operation, each time, the affected hip and extremity should be well rubbed with the stimulating liniment.

HYDROPHOBIA.

2070. This dreadful disease is usually communicated by the bite of a rabid dog, and usually manifests itself in from fifteen to sixty days after the accident, though a much longer time may elapse before it is developed.

2071. An individual may be bitten by a rabid dog without suffering any bad consequences. Mr. Hunter mentions twenty persons who were bitten, and only one of them was in the least affected.

2072. Hydrophobia may be caused by the poisonous saliva coming in contact with a wound, or a raw surface, or by handling the garments of a person who died of the malady.

2073. The disease, in some cases, attacks the individual suddenly, but in others it is preceded by chilliness, flushes of heat, languor, depression of spirits, restlessness, disturbed sleep, thirst, costiveness, nausea, and sometimes vomiting. The patient is reserved, suspicious, gloomy, and silent. The wound or bite is apt to be painful, and often assumes a livid, or inflamed appearance. At length a sense of tightness is felt in the chest, with difficult swallowing, slight tremors of the body, and a considerable collection of saliva in the mouth. An intolerable dread of liquids is soon experienced, and even the sight or mention of them is often sufficient to bring on the most violent spasms. The thirst is excessive, and the respiration short and hurried. The spasms occur at irreg-

ular periods, and continue from a quarter to half an hour. In the intervals the patient talks calmly and rationally, and cautions his friends to be on their guard lest he should injure them in his fits of madness. During the paroxysms, the countenance assumes a wild and furious aspect; the eyes are blood shot and sparkling; the body and limbs are thrown into violent spasms; the fists are clenched; the mouth foams; and the unfortunate sufferer attempts to bite every one who falls in his way.

2074. Magendie, in some remarks on hydrophobia, says, "Formerly, when an individual was seized with this terrific affection, the mode of treatment was as follows—and indeed, these charitable plans were employed at no very distant period from our own. The wretched sufferer was either stifled between two mattresses, or bled from the four extremities, and allowed to perish from the loss of blood; or he was put into a sack, and thrown, sack and all, into a river. These methods of treatment, originally adopted from ignorance, were continued up to our own time, with the most culpable indifference."

2075. Dr. Good observes, "There is no disease for which so many remedies have been devised, and none in which the mortifying character of vanity of vanities, has been so strikingly written upon all of them."

2076. Treatment. If a patient is attacked suddenly with a paroxysm, a table-spoonful of the antispasmodic tincture should be given without delay, and an equal or double the quantity of the same, added to half a pint of warm water, administered by injection. This will produce an immediate and powerful effect upon the system, and generally allay the convulsive tremors. The injection may be repeated, if necessary, and in the meantime heated stones or bottles of hot water wrapped in damp cloths should be placed at the feet and sides, and preparations made to administer the vapor bath. This should be followed by an emetic of lobelia, and all the requisites of a full and thorough course of medicine.

2077. If the wound puts on a livid, or inflamed appearance, it should be washed with rheumatic drops, or tincture of myrrh, and poultices applied, as in any other sore.

2078. The mouth should be frequently washed and the throat gargled with bayberry tea, in order to remove the poisonous saliva, and vitiated secretions.

2079. The courses may be administered every twelve, or twenty four hours, until the disease is completely removed, and in the intervals, cayenne, bayberry, and scullcap tea should be freely employed. The stimulating tea (1515) will answer an excellent purpose.

2080. Some physicians regard scullcap as a specific in hydrophobia, (927) but I should be disposed to use it merely as an auxiliary remedy.

2081. The vapor bath of itself is said to be an invaluable agent in the treatment of hydrophobia. M. Buisson read an interesting paper on the subject before the Paris Academy of Arts and Sciences, in which he gives the particulars of his own case. He was called to a woman who was laboring under hydrophobia, and some of the poisonous saliva coming in contact with an ulcerated sore on one of his fingers, he contracted the disease himself. He says, "The ninth day after the accident, I suddenly felt a pain in my throat, and a still greater pain in my eyes; my body seemed to have become so light, that I fancied I could leap an immense height; and the skin on my ulcerated hand became so acute in feeling, that I thought I could have counted every hair on my head with it without seeing. The saliva was continually rising in my mouth, and not only the sight of shining objects, but the very contact of the atmosphere, became painful to me. I felt a desire to run about and bite every animate and inanimate object but my own fellow creatures; in fine, I experienced great difficulty of breathing, and the sight of water was more distressing to me than the pains in my throat. These effects returned at intervals of five minutes from each other, and it appeared to me that the pains originated in the diseased finger, and extended as high as the shoulder."

2082. "M. Buisson," says a London medical journal, "concluding from these various symptoms that he was suffering under hydrophobia, resolved to make an end of himself by suffocating himself in a vapor bath. With this view he raised the heat to 140 degrees of Fahrenheit, but was delighted no less than surprised, to find that all his pains disappeared. He went out of the bath completely cured, made a hearty dinner, and drank more freely than was usual with him. He adds that he has treated more than fourscore persons, who had been bitten by mad dogs, in a similar manner, and that they had all recovered, with the exception of a child seven years old, who died in the vapor bath he was administering. The writer prescribes for all persons who have the misfortune to suffer from the bite of rabid animals, a certain number of vapor baths, and violent perspiration every night, produced by covering themselves with blankets, with a feather bed above them; this perspiration to be aided by drinking copiously of a hot decoction of sarsaparilla. He concludes by remarking, that those animals in whose case madness most frequently exhibits itself, as if spontaneously, such as dogs, wolves, and foxes, are never liable to transpiration."

HYSTERIA.

2083. Hysteria is principally confined to the female sex, and is most common about the period of menstruation. It seldom occurs before the age of puberty, or after the final cessation of the menstrual discharges. The attack is characterised by alternate fits of weeping, sobbing, and convulsive laughter, and sometimes the patient utters loud and piercing shrieks. The countenance has a wild expression, accompanied, in severe cases, with incoherent talking, grinding of the teeth, and tearing of the hair. The eyes roll about frightfully, the fists are clenched, and sometimes the whole body is convulsed.

2084. Cases occur in which the above symptoms are not manifested, and the patient sinks at once into a state of insensibility, with her eyes closed, her teeth pressed firmly together, and her breathing slow, but not laborious. She may remain in this situation for several hours, or perhaps a day, unless roused to consciousness by a proper application of remedies.

2085. Among the various symptoms which characterize hysteria in its different forms and grades of violence, are palpitation of the heart, difficulty of breathing, fear of impending suffocation, hiccough, sickness at the stomach, vomiting, despondency, coldness of the extremities, intolerance of light and sound, sighing, hoarseness, loss of voice, sudden fits of coughing, pains in the abdomen and left side, a sense of tightness in the region of the stomach, and a feeling as if a ball was rising in the throat. The countenance is sometimes pale, and at others red and swollen. The paroxysm is generally of short duration.

2086. Hysteria is occasioned by menstrual irregularities, indolence, luxurious living, irregular hours, crowded and heated apartments, severe mental emotions, fright, costiveness, worms, indigestible food, vitiated bile, suppressed perspiration, and exposure to cold during the menstrual period. It is frequently connected, also, with disease of the spine, and womb.

2087. Treatment. In a violent paroxysm of this malady, the dress is to be loosened about the waist, and one or two teaspoonfuls of the antispasmodic tincture administered, as directed in the treatment for convulsions. (1888, *et seq.*) This should be followed by a tea of cayenne, bayberry, and scullcap, containing a small portion of green lobelia, (1515) administering a tea-cupful every ten or fifteen minutes until perspiration ensues. In the meantime, heated stones wrapped in damp cloths should be placed at the feet and sides. If this does not afford the desired relief, it

will be necessary to give a course of medicine; and if convulsions are present, or if there is a violent determination of blood to the head, the course should be preceded by two or three stimulating injections. (1567, 1574.)

2088. If the patient falls into a state of insensibility, the same treatment may be pursued which is recommended in *suspended animation*, to which the reader is referred.

2089. Mild cases of hysteria may be relieved by a tea of composition, cayenne, pennyroyal, catnip, summer savory, yarrow, or any of the warming and stimulating herbs, giving it in frequent draughts so as to produce perspiration.

2090. If the disease depends on an affection of the spine, or womb, or if the general health is very much impaired, the most speedy and effectual means of affording relief will be to administer a few courses of medicine, and in the intervals, making use of the ordinary stimulants and tonics, according to the circumstances of the case. (1660, *et seq.*) Attention to diet, (1680, *et seq.*) exercise in the open air, (1709, *et seq.*) a cheerful temper, and an avoidance of every thing which predisposes to an attack, should be rigidly observed. If the spine is affected, it may be rubbed five or ten minutes every night and morning with pepper sauce, vinegar and cayenne, (1531) rheumatic drops, or the volatile, or stimulating liniment. The use of the hand bath every morning will also be of service. (1455.)

INFLAMMATION OF THE BLADDER.

2091. In this disease, there is a burning pain in the region of the bladder, which is increased by pressure on the lower part of the abdomen. The abdomen is also more or less swelled. The urine is scanty, and of a deep red color, and when passed occasions intense pain. Sometimes it is mixed with blood. The skin is hot and dry, the thirst urgent, and the bowels torpid. Nausea and vomiting frequently occur, accompanied, in some instances, by troublesome bearing down pains in the rectum. When the inflammation is seated in the neck of the bladder, a retention of urine is a common symptom, and the bladder consequently becomes very much distended. A sudden cessation of pain, coldness of the extremities, a clammy sweat, and great prostration, are extremely unfavorable symptoms, and indicate a state of gangrene. The disease is caused by blisters, the internal use of cantharides, the introduction of instruments into the bladder, obstructed perspiration, and exposure to a cold or variable atmosphere. It is liable to attack persons with gout and dyspepsia.

2092. The *chronic* as well as the *acute* form of the malady, frequently results from injudicious medical treatment. The former is a tedious as well as distressing complaint, being accompanied with febrile symptoms, derangement of the stomach and bowels, burning pain in the bladder, and a frequent desire to pass water, which is mixed with ropy or stringy mucus, and sometimes a considerable portion of blood.

2093. TREATMENT. If the symptoms are violent, a course of medicine should be given, repeating it at proper intervals until the disease is subdued.

2094. Between the courses, the stimulating tea, (1515) or a tea of composition, rendered mucilaginous by the addition of slippery elm, may be drank freely, keeping the skin warm and moist in the meantime, as this will counteract any distress which might be occasioned by the cayenne.

2095. The abdomen in the region of the bladder should be frequently bathed with rheumatic drops, volatile liniment, or vinegar and cayenne; (1531) or if the pain is extremely severe, flannels wrung out of either of these liquids, and warmed by the fire, may be applied, together with a heated stone wrapped in a damp cloth; or an application may be made of the Indian meal poultice, or a poultice of burdock, or mullein leaves. (1061, 1135.)

2096. Diuretics are beneficial, and may be given freely. I would particularly recommend the cool wort, and sumach berries. Where there is a discharge of mucus from the bladder, this class of remedies is very important.

2097. Injections into the rectum exercise a powerful influence over the bladder, and should be repeated every hour during the violence of the disease. They allay the pain, and tend in an especial manner to subdue the inflammatory action. Each injection should contain half a tea-spoonful of green lobelia, more or less, regulating the quantity so as not to occasion distressing nausea. (1567, *et seq.*)

INFLAMMATION OF THE BOWELS.

2098. The inflammation, in this disease, may be seated either in the internal or external coat of the bowels, constituting two different affections. In the former, *diarrhœa* or *dysentery* ensues, which have been described under the appropriate heads, and directions given for the treatment. Sometimes the inflammation is confined exclusively to the mucous membrane of the duodenum, and in that case there is often an obstruction of the biliary duct,

(see Fig. 1—page 15) followed by a bitter taste in the mouth, and a yellow or jaundiced hue of the skin.

2099. Inflammation of the external coat of the intestines, is termed *peritonitis*. Sometimes it is ushered in by a severe chill, and at others commences with an uneasy sensation in the bowels, followed by a fixed and burning pain, which is increased by pressure on the abdomen. There is more or less thirst, accompanied by a dry and hot skin, short and laborious breathing, and sometimes nausea and vomiting. The tongue is mostly red along the edges, with a dry, brownish coat in the centre. The patient "generally lies still upon the back, every motion being attended by augmented pain; and the knees are frequently raised so as to remove the pressure of the bed clothes." In most cases the bowels are obstinately costive. In seven or eight days, if the disease is not checked, gangrene is liable to ensue, which is announced by a sudden remission of pain, sinking of the pulse, cadaverous expression of countenance, and cold, clammy sweats.

2100. Among the causes of this malady, are injuries about the abdomen, a neglected state of the bowels, and sudden changes from heat to cold.

2101. Treatment. Inflammation of the external coat of the bowels, particularly if extensive, is a disease of considerable danger, and should be met at the outset with prompt and energetic treatment. A thorough course of medicine should be given, commencing with one or two strong injections, (1567, *et seq.*) and if this does not afford the desired relief, the course should be repeated as soon as the symptoms become unfavorable.

2102. Applications should be made to the abdomen, such as are directed for inflammation of the bladder. (2095.)

2103. Between the courses, the patient should be kept in a gentle perspiration with the stimulating tea, (1515) increasing or diminishing the quantity of cayenne and lobelia according to circumstances. Composition tea alone may suffice, in some cases, to keep the skin moist. Injections are important in this disease, and should be administered four or five times a day; or even every hour if the case is severe, or critical. Each one should contain a portion of lobelia.

2104. If symptoms of gangrene occur, the patient is not to be abandoned, for a cure may be effected even then, provided the treatment is sufficiently prompt and energetic. Our chief reliance must be upon courses of medicine, and the frequent use of strong injections.

2105. During convalescence, the patient should restrict him-

self to a light, nourishing diet, and avoid exposure to the cold, as, without adequate precaution in this respect, he may experience a relapse.

INFLAMMATION OF THE BRAIN.

2106. The membranes which surround or cover the brain, may be the seat of the inflammation, or it may attack the substance of the brain itself. It usually commences with a sense of fulness in the head, and flushing of the face, followed by severe headach, throbbing in the temples, redness and sparkling of the eyes, florid countenance, heat and dryness of the skin, extreme thirst, intolerance of light and sound, watchfulness, and violent delirium. The pain is dull, or shooting, according as the substance of the brain, or its membranes are affected; and in some cases it occupies the whole of the head, while in others it is confined to a particular portion. The tongue is sometimes red, and at others of a yellow, or dark color. The stomach and bowels are more or less disordered, and the liver often in a torpid or inactive state, as is indicated by the whitish color of the stools.

2107. As the disease advances, the delirium increases in violence; the eyes are prominent, the countenance assumes an expression of ferocity, and the patient talks in a wild and incoherent strain. The breathing is generally deep, slow, and often laborious. Among the symptoms which frequently accompany the malady, are morbid and acute hearing, followed by deafness, imperfect vision, difficulty of swallowing, yellowness of the skin, and convulsive movements of the limbs, or of the whole body.

2108. Where the head is shaved and blistered, and the patient leeched, cupped, bled, and dosed with poisons, the malady often proves fatal in five or six days.

2109. The disease is caused by mechanical injuries of the head, suppression of the catamenia, changes from heat to cold, checked perspiration, disorder of the stomach and bowels, drunkenness, intemperance in eating, and severe or protracted study. It is also frequently a sequel of other affections.

2110. Among the symptoms indicating an unfavorable termination, are weak pulse, cold and clammy skin, grinding of the teeth, stupor, loud breathing, hemorrhage from the bowels, and a red, yellow, or dark colored urine.

2111. Treatment. In violent attacks, the most energetic treatment is necessary, for unless we recall the blood from the brain, and restore an equilibrium to the circulation, the inflamma-

tion may go on increasing until it is impossible to effect a cure. Hence, a full course of medicine should be given, preceded by two or three injections to evacuate the bowels; and the course may be immediately repeated, if the unfavorable symptoms return. The head should be kept in an elevated position, to prevent the accumulation of blood in the organ, and heated stones wrapped in damp cloths placed at the feet and sides.

2112. Between the courses, the stimulating tea (1515) may be used to keep up a gentle perspiration, increasing the quantity of cayenne and lobelia, if desirable. Injections should be given four or five times a day, (1567, *et seq.*) or oftener if necessary, as these have a powerful effect in counteracting the determination of blood to the brain. While the head continues hot, cloths wrung out of cold water should be applied to it, and renewed as often as they become warm. After the inflammation is checked, the health is to be restored by a light, nourishing diet, and the usual strengthening or restorative medicines.

INFLAMMATION OF THE KIDNEY.

2113. This affection commences with chills, succeeded by a hot and dry skin, and a shooting, or dull pain in the small of the back. This pain often extends to the bladder and thighs, and is increased by pressure over the region of the kidney, or by any violent motion, or contortion of the body. Sometimes there is a drawing up of the testicle on the affected side. The bowels are generally costive. There is a frequent desire to pass water, which is scanty, and often red. If both kidneys are inflamed, the urine is entirely suppressed, in which case the perspiration soon acquires a urinous smell. This symptom is a bad one, and requires active treatment, for if the urine is suffered to remain in the blood, it will give rise to drowsiness, and stupor, from which the patient may never recover. Sickness at the stomach, and vomiting, are not unusual symptoms.

2114. The causes which give rise to inflammation of the kidney, are external injuries, strains of the back, lifting heavy weights, the presence of gravel in the kidney, the use of cantharides, and other animal, mineral, and vegetable poisons.

2115. Treatment. In a mild attack of this disease, relief may be obtained by keeping the patient in a perspiration with composition tea, and the application of heated stones wrapped in damp cloths to his feet. Injections, diuretics, mucilaginous drinks, and stimulating applications to the small of the back, where the

pain is seated, are all beneficial, if not indispensable, and may be used as directed for *inflammation of the bladder*. If both kidneys are inflamed, or the disease assumes a threatening aspect, one or more courses of medicine are to be administered.

INFLAMMATION OF THE LIVER.*

2116. This disease may be developed gradually, or it may be sudden in its attack, commencing with chilliness, and pain in the right side, followed by fever, difficulty of breathing, cough, thirst, yellowness of the skin and eyes, clay colored stools, and generally nausea, and vomiting. The patient experiences a difficulty in lying on the left side. The urine is scanty, and of a yellow, or dark color. The pain in the side is sometimes acute, and at others dull or obtuse, and is increased by pressure. Pain in the right shoulder is also a common symptom. The tongue is sometimes smooth and glossy, but is generally covered with a white, or yellow coat.

2117. Inflammation of the liver is caused by injuries about the right side, exposure to wet and cold, errors in diet, drinking cold water when the body is heated, luxurious living, sedentary habits, a neglected state of the bowels, and especially the use of mercury, which acts specifically upon the liver as a powerful poison. "In warm climates," says a medical writer, "this organ is more apt to be affected with inflammation than perhaps any other part of the body, probably from the increased secretion of bile which takes place when the blood, by exposure to cold, is thrown on the internal parts; or from the bile becoming acrid, and thereby exciting an irritation in the liver."

2118. *Chronic inflammation of the liver*, says the same writer, "is usually accompanied by a morbid complexion; loss of appetite and flesh; costiveness; indigestion; flatulency; clay colored stools; pains in the stomach; a yellow tinge of the skin and eyes; high colored urine, which deposites a red sediment, and ropy mucus; an obtuse pain in the region of the liver, extending to the shoulder, and not unfrequently with a considerable degree of asthma."

2119. Inflammation of the liver may terminate in one or more abscesses, the contents of which may be discharged externally, or into the abdomen or chest, or may issue by an opening into the intestines, stomach, or lungs, in case the liver should previously form an adhesion to either of these organs.

* Hepatitis.

2120. Treatment. The principles of treatment are the same in this disease, as in inflammation of any other internal part. We must endeavor to restore an equilibrium to the circulation, and when this is accomplished, the affected organ will be relieved. A tea of composition, or of cayenne and bayberry, may be taken sufficiently often to keep the skin moist; and if green lobelia be added to it in a small quantity, so as not to excite an unpleasant degree of nausea, it will be still more beneficial. Injections should be given several times a day, whether the bowels are costive or not; and if the side is very painful, applications should be made to it as directed for the abdomen, in inflammation of the bladder. (2095.) If nervous symptoms arise, a portion of scullcap, or lady's slipper, may be added to the other medicines. The strength of the patient should be sustained by some nourishing liquids, such as the oat meal, Indian meal, or unbolted wheat meal gruel. If the case is obstinate, a course of medicine should be administered, repeating it according to the degree and urgency of the symptoms.

2121. If the inflammation should terminate in an abscess of the liver, which is often indicated by chills, succeeded by flushes of heat, (1363) tonics should be given several times a day, in addition to the other treatment, to keep up the strength and vigor of the system; and if the abscess points externally, the elm and ginger poultice should be applied to promote the discharge of its contents, as in any other tumor or swelling which has proceeded to suppuration. (1361, *et seq.*)

2122. During convalescence, the feet should be kept warm and dry, and exposure to a cold or damp atmosphere avoided. Butter, and all fat or oily substances should be excluded from the diet, as they tend to derange the stomach, and thereby injuriously affect the liver.

2123. In the *chronic* form of the disease, courses of medicine are generally required, together with thorough intermediate treatment. (1667, *et seq.*)

INFLAMMATION OF THE LUNGS.*

2124. Inflammation of the lungs, or lung fever, as it is commonly termed, is usually ushered in by cold chills, followed by a hot and dry skin, hurried and laborious breathing, tightness of the breast, distressing cough, scanty and high colored urine, and dull pain in some part of the chest, which is increased by coughing, or taking a long breath. The tongue is often dry, and of a dark

* Pneumonia.

color. The most easy position for the patient is upon his back. "In the beginning, the cough is frequently without expectoration; but in some instances it is moist, even from the first, and the matter is various both in color and consistence, and is often streaked with blood." In some cases it resembles a bright red jelly. It is usually glutinous, however, and adheres to the sides of the vessel in which it is contained.

2125. In severe or violent attacks, the countenance becomes livid, and the lips blue, or purple, accompanied with a dry, harassing cough, a sense of suffocation, delirium, and sometimes stupor.

2126. The disease, if improperly treated, often proves fatal in from three to seven days. It is most prevalent in cold and changeable weather, and in the practice of the diplomatised physicians, is frequently a sequel of other maladies. It is mostly confined to one lung, but if both lungs are involved, the danger is proportionably increased. The inflammation may terminate in suppuration, (1361, *et seq.*) "which event is to be known by frequent slight shiverings, an abatement of the pain and sense of fulness in the part, and by the patient being unable to lie on the side which was affected, without experiencing great uneasiness." Gangrene arises occasionally, and is indicated by an offensive breath, and expectoration of a dark colored and highly fetid matter.

2127. TREATMENT. When the disease has made any considerable progress, the sufferings of the patient are so acute as to require the most active treatment to afford him relief. Heated stones wrapped in damp cloths are to be placed at the feet and sides, and the stimulating tea administered in the dose of half a tea-cupful every five, ten, or fifteen minutes, until the difficulty of breathing is relieved; and in the meantime one or two injections (1567) must be given to evacuate the bowels thoroughly. The quantity of cayenne in the stimulating tea may be increased, if considered necessary. As soon as the patient begins to perspire, lobelia should be given to cleanse the stomach, followed by all the requisites of a course of medicine, and this may be repeated according to circumstances until the malady is removed.

2128. Between the courses, a tea of composition, or of cayenne and bayberry, should be given to keep the skin moist, adding a small portion of lobelia, if the cough is troublesome or the breathing difficult. The cough may also be benefited by the use of slippery elm tea, the cough jelly, (1525) or by inhaling the fumes of vinegar, or even the vapor of water.

2129. Injections may be advantageously given several times a day, and if the symptoms are violent, should not be omitted.

2130. External applications should be made to the seat of the pain, as directed for the abdomen, in inflammation of the bladder. (2095.)

2131. The patient should be nourished with some light gruel, which will not oppress the stomach, and make free use of the restorative medicine during convalescence.

INFLAMMATION OF THE STOMACH.*

2132. This disease is characterized by a constant burning pain in the stomach, accompanied by fever, restlessness, depression of spirits, a confined state of the bowels, and frequent retching, or vomiting, especially after eating, or drinking. The tongue is mostly red, but is sometimes covered with a white, or dark coat. The pain in the stomach is sometimes increased by pressure in the region of that organ. If the disease is not subdued, other symptoms arise, such as difficulty of swallowing, hurried and oppressed breathing, sore throat, hiccough, great prostration of strength, a short and painful cough, cold, clammy sweats, and sometimes delirium.

2133. The disease is caused by indigestible food, draughts of cold water when the body is heated, the use of corrosive poisons, and exposure to a damp or chilly atmosphere. It also follows in the train of other affections.

2134. Treatment. As the welfare of the whole vital economy depends, in a great measure, upon the healthy condition of the stomach, we should resort to active and thorough treatment, in order to check the disease as speedily as possible. Hence it is proper to administer a course of medicine, which will not only cleanse the stomach, but counteract the morbid determination of blood to the organ, and thereby subdue the inflammatory action. The different teas which are employed during the course, should be strained, and the lobelia also should be administered without the sediment, as the latter, by adhering to the mucous coat of the stomach, may occasion tedious and distressing nausea. (1612.)

2135. After the course, the patient should be kept in a gentle perspiration, and for this purpose, a heated stone wrapped in a damp cloth may be placed at his feet, and composition tea, or any similar preparation, rendered mucilaginous by the addition of slippery elm, given in small and frequently repeated doses.

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* Gastritis.

Injections several times a day, will be attended with decided benefit. The region of the stomach should be rubbed frequently with rheumatic drops, or pepper sauce; and flannels, or poultices applied to it, if necessary, as directed for the abdomen, in inflammation of the bladder. (2095.)

2136. While the stomach is inflamed, the digestive process is partially if not wholly arrested, and it is important, therefore, that the patient should refrain from the use of solid food, until permanent recovery has taken place. Sago gruel, slippery elm and milk, or any mucilaginous preparation, may be used moderately with advantage.

INFLUENZA.

2137. There is but little difference between a common cold or catarrh, as it is termed, and the influenza, excepting that the latter prevails as an epidemic, and is much more severe and sudden in its attacks. Chilliness, followed by sneezing, hoarseness, fever, difficulty of breathing, pain in the breast, side, and other parts of the body, more or less cough, and a thin discharge from the nostrils, are its common characteristics. It produces a great degree of debility, and is often complicated with inflammation of the lungs.

2138. Treatment. A mild case of influenza may often be cured by sitting near the fire, covered with a cloak, or blanket, and taking composition, or cayenne and bayberry tea, to keep up a moderate perspiration. Where the breathing is difficult, a small portion of lobelia may be added to the tea. An occasional injection will accelerate the progress of the cure, and if the bowels are costive, should not be omitted. The cough may be alleviated by any of the remedies enumerated under that head. (1905, *et seq.*) If there is severe pain in the chest, flannels moistened with rheumatic drops, or volatile liniment, may be applied, together with a heated stone wrapped in a damp cloth. (2095.) If the disease does not yield, a course of medicine will be requisite, repeating it according to the circumstances of the case.

ITCH.

2139. The itch is generated by personal filthiness, and is highly contagious. Impure air, and a coarse or meagre diet renders the system more susceptible of its influence. The disease is

readily contracted by sleeping in a bed which has been occupied by a person infected. It has its origin in the skin, and commences with an itching between the fingers and about the joints, gradually extending to other parts of the body. When the patient is warm in bed the itching is increased, which becomes at length almost intolerable. In the meantime small pimples, filled with a watery, or yellowish fluid, make their appearance; and from the disposition of the individual to scratch himself, the disease is not only communicated to other parts, but the skin is often broken, and converted into a sore.

2140. TREATMENT. An occasional dose of composition, especially at bed time, is all the medicine that is generally required internally, unless the health is very much impaired, and then either an emetic, or a full course of medicine may be administered. If the appetite is impaired, the spiced bitters, or some other tonic may be used. The diet should be light, and chiefly vegetable, avoiding butter, and all animal fats. If costiveness prevails, any of the remedies mentioned under that head may be employed. (1896, *et seq.*)

2141. There are many external applications which may be made with advantage. Among these are tincture of lobelia, meadow fern ointment, an ointment of yellow dock, (1218) and rheumatic drops combined with one fourth part of the spirits of turpentine. An application of the rheumatic drops alone, followed by one of the meadow fern ointment, as soon as the skin has had time to dry, has been found very effectual. The patient should be washed thoroughly clean every day with warm water and soap; or the vapor bath may be administered, and the surface sponged with a tepid solution of sal æratus, or bicarbonate of soda. (1029.) One or the other of the above ointments, or washes, should be applied every night and morning.

2142. If the skin is broken and irritable, it may be washed with a tea of sumach, or witch hazel leaves, and healing salve or a poultice applied, according to the nature of the case.

JAUNDICE.

2143. This disease is occasioned by a diffusion of bile through the system, giving rise to a yellow color of the skin, eyes, urine, and even the perspiration. It comes on occasionally without any warning, but is usually preceded by languor, costiveness, flatulency, pain in the bowels, drowsiness, chills and heats, loss of appetite, bitter taste in the mouth, disagreeable itching over the

whole body, and in some instances a dull or heavy pain in the right side. The stools are whitish or clay colored, and the tongue is covered with a dense yellow coat. Objects frequently appear discolored, having a yellow, or greenish aspect. In severe cases, the skin becomes very dark, which has given rise to the name of *black jaundice*. It is a curious fact, that while the urine and perspiration, in females, communicates a yellow tinge to linen, the milk is unaffected either in taste, or color.

2144. If the disease is not arrested, emaciation ensues, accompanied with night sweats, and difficulty of breathing

2145. Jaundice is caused by whatever interferes with the flow of bile from the liver into the intestines. Hence it may be produced by disease of the liver, by inflammation of the biliary ducts, or the presence of gall stones in these passages, or the bile may become too thick to be discharged through its natural channels. Inflammation of the inner coat of the duodenum, also, by obstructing the mouth or orifice of the biliary duct, may give rise to the malady. (See Fig. 1, page 15.)

2146. TREATMENT. In the treatment of jaundice, we must warm and invigorate the system with cayenne and bayberry, and keep the bowels thoroughly evacuated with injections. The latter may be administered several times a day, and are particularly beneficial, inasmuch as they cause the bile to flow again into the intestines, where it belongs. If the stomach is much disordered, it must be cleansed with an emetic, after which the spiced bitters, or some other tonic may be employed, to strengthen the digestive organs. In the meantime free use should be made of cayenne. If there is severe pain in the bowels, or side, flannels wrung out of rheumatic drops, or other stimulating liquid, may be laid over the affected part. (2095.) An occasional dose of lobelia pills (1298, *et seq.*) may be employed with advantage. If the case is obstinate, or the symptoms alarming, a course of medicine should be given, repeating it at proper intervals, until the disorder is removed.

2147. If the breathing is difficult, lobelia in small doses will be serviceable.

2148. Mild cases of jaundice have been cured by a preparation of bayberry, American aspen, and wild cherry tree bark. (995.)

LOCKED JAW.

2149. This is a disease in which the jaws become locked from spasm or rigidity of the muscles. It is occasioned by

wounds, bruises, mineral and vegetable poisons, sudden changes from heat to cold, surgical operations, drinking cold water when the body is heated, and a variety of other causes. Punctured and lacerated wounds produce it more frequently than injuries of any other description. It usually commences with stiffness of the neck and shoulders, which ultimately extends to the jaws, accompanied by painful and difficult swallowing. At length the jaws become permanently closed or pressed together. Sometimes the whole body is affected with the spasms, being drawn forward, backward, or sideways, according to the convulsive action of the muscles. There is a tightness of the breast, with a severe pain in the region of the stomach, darting backward to the spine. The countenance is hideously distorted, and the respiration labored and difficult. The jaws usually remain fixed, but in other parts of the body, there is usually a succession of spasms, until the whole frame becomes rigid and motionless.

2150. The disease occasionally attacks new born infants, but is of rare occurrence among old people.

2151. The diplomatised physicians acknowledge that they have no remedy for this dreadful malady. Dr. Mackintosh says, "After a careful review of the cases recorded in the annals of physic, no plan of treatment hitherto employed seems to have been attended with benefit. Bleeding, purging, cold and warm bathing, all the most powerful narcotics, and mercury, have each had its warm supporters, but with little success."*

2152. TREATMENT. Patients attacked with the locked jaw, may be speedily relieved by the use of the antispasmodic tincture, which may be poured into the mouth between the teeth, and as soon as it comes in contact with the parts about the throat, the rigidity of the muscles will give way, and the mouth open. The tincture may be given in the dose of one, two, or three tea-spoonfuls, and repeated every five minutes until the desired effect is produced; and in the meantime, heated stones wrapped in damp cloths should be placed about the patient, and two or three injections administered. These should contain rather more than the usual quantity of lobelia, (1567, 1574,) as this medicine tends in a powerful manner to subdue the spasms. As soon as the patient is relieved, so that he can swallow without difficulty, a thorough course of medicine should be given, making free use of a tea of cayenne, bayberry, and scullcap, the latter of which is particularly beneficial in diseases of this description. If the health is

* Practice of Physic, 2d American edition, vol. ii. p. 139.

feeble, it may be necessary to give a succession of courses, attending strictly to the diet, (1680, *et seq.*) and intermediate treatment. (1660, *et seq.*)

MEASLES.

2153. This disease is ushered in by headach, and slight creeping chills, which are followed by feverish symptoms, hoarseness, difficult breathing, vomiting, swelling and redness of the eyes, a hoarse, dry cough, drowsiness, sneezing, and a thin, watery discharge from the eyes and nose. The eruption is sometimes preceded by delirium, or convulsions. The tongue is covered with a white coat, and the breath is very offensive. On the third or fourth day, but sometimes considerably later, the rash makes its appearance about the face and forehead, and then successively on the body and extremities, reaching the feet in the course of twenty four, or forty eight hours. It consists of small red spots, resembling fleabites, which run into each other and form patches, leaving the intermediate skin of a natural color. The rash begins to fade in about three days, and from that time gradually disappears, accompanied with a separation of the cuticle or outer skin, in the form of scales. The febrile and other symptoms are liable to continue while the eruption is out, unless subdued by proper treatment. In severe cases, the face and eyes are much swollen, the tongue brownish, and the rash of a dark or livid color, which has given rise to the name of *black measles.*

2154. This disease rarely occurs more than once in the same individual. Children are more liable to it than grown persons. It is contagious, and occurs at all seasons, but is most prevalent in the winter.

2155. The measles and scarlet fever bear a close resemblance to each other, but the former may be distinguished by the hoarse, dry cough, the sneezing, the inflamed and watery eyes, the thin discharge from the nostrils, and the natural color of the skin between the patches of eruption.

2156. Among the unfavorable symptoms, are delirium, copious diarrhœa, a tendency of the eruption to recede, and a pallid, or livid color of the skin.

2157. In the old school practice, the measles are apt to be followed by consumption, dropsy, inflammation of the lungs, and other equally dangerous disorders.

2158. Treatment. In the milder form of the disease, nothing more is required than an occasional dose of composition

to keep the skin moist; and if the bowels are confined, an injection may be administered once or twice a day. Exposure to a damp or cold atmosphere must be avoided. A dose of composition should be administered at bed time, and a jug of hot water wrapped in a damp cloth, placed at the feet. The diet is to be light, and easy of digestion, consisting of wheat jelly, the unbolted wheat meal gruel, or any similar preparation which is not likely to oppress or irritate the stomach.

2159. If the eruption is slow in making its appearance, accompanied by fever, and difficulty of breathing, an emetic of lobelia should be administered, or if necessary, a full course of medicine. This, with a free use of cayenne, will bring out the eruption, and after that, by keeping up a gentle perspiration, all unfavorable symptoms will be obviated. If there is a tendency of the skin to become hot and dry, the stimulating tea (1515) may be employed, and an injection administered every hour or two. The same treatment is requisite in case the eruption suddenly disappears, or the skin assumes a pallid, or livid color.

2160. The cough and difficulty of breathing may be alleviated by any of the remedies usually employed for that purpose, such as the tincture of lobelia dropped on sugar, (1283) or the cough balsam, or jelly. (1295, 1525.) If the eyes are sore, or inflamed, they should be washed occasionally with a warm tea of raspberry, witch hazel, or sumach leaves, rendered slightly pungent with rheumatic drops.

MILK SICKNESS OR PUKING COMPLAINT.

2161. This disease is peculiar to certain portions of the Western country, and commences with lassitude, debility, and tremors, succeeded by a burning sensation in the stomach, offensive breath, constant retching or vomiting, and a confined state of the bowels, particularly in the latter stages of the complaint.

2162. Milk sickness is said to be caused indirectly by a poisonous vine or shrub, which is eaten by cattle, producing in them what is called the *trembles*. They frequently die of this malady in twenty four hours, and dogs are killed by eating the flesh of their carcasses. The milk of cows is poisoned by the plant, and persons using it, are liable to be attacked with the symptoms above enumerated. Even butter and cheese made in the districts where the plant is found, cannot be eaten without the risk of destroying life. Dr. Fansher of Connecticut, has published a letter on the subject, in which he says, "I understand that the family of Mr. Simsbury have been poisoned by eating cheese which

came from New Orleans, and every member of it perished; and having recently returned from a tour to the West, I have thought it my duty to state what I heard relative to the milk sickness districts, viz. :—that the beef, butter, and cheese, as well as the milk of the cows which feed in the woods, was deadly poison to those who partook of them, and that persons in that region dare not make use of either; but that they are in the habit of sending what they dare not eat to New Orleans, where it is sold to merchants, who are not aware of the criminal fraud, and suspect not that they are dealing in a deadly poison."

2163. The vine is found in various parts of Ohio, Kentucky, Indiana, Illinois, and some other States; and it is usually in these localities, I am informed, that the milk sickness prevails. I do not know the botanical, or even common name of the plant.

2164. Treatment. Courses of medicine to cleanse the system, and stimulating injections, frequently repeated, to evacuate the bowels, are both important in this disease, as it is one of considerable obstinacy and danger. Perspiration should be produced as speedily as possible, as this will tend to check the excessive vomiting. A tea of cayenne and lady's slipper, with a small portion of lobelia, is said to answer an excellent purpose. It may be given in the dose of a table-spoonful, and repeated every five minutes until the stomach becomes quiet. A gentleman in the West writes me thus: "I was called a few days ago to a case of milk sickness, which I treated as follows. I commenced by giving pepper sauce in table-spoonful doses, placing heated stones wrapped in damp cloths at the feet and sides of the patient, bathing the region of the stomach with warm rheumatic drops, and administering a number of very strong injections in rapid succession, each one containing a tea-spoonful of cayenne, and a table-spoonful of antispasmodic tincture. By this time the circulation was somewhat equalized, a moderate perspiration ensued, and the vomiting ceased. I then gave a full course of medicine, and the emetic brought up a large quantity of offensive matter from the stomach. I followed this with composition tea, to keep the skin moist, administering an injection every two hours; and the next day I repeated the course, which removed every vestige of the disease. The patient was left in a very debilitated state, but by the use of tonics, and a light, nourishing diet, he soon recovered his strength."

MORTIFICATION.

2165. In mortification, the blood becomes stagnant, ceasing entirely to circulate, and the part loses its sensibility and natural warmth, assuming a dark or livid color. It is soft or doughy to the touch, and the skin is frequently raised in blisters. At length, if the case does not terminate fatally, a line of demarcation is drawn between the dead and the living flesh, and the former separates from the latter. Previous to this, however, nature guards against the possibility of hemorrhage, by plugging up the vessels leading to the affected part, with coagulated blood.

2166. The commencement of mortification is indicated by a sudden cessation of pain, and if it is extensive, or involves an important part or organ, the countenance assumes a cadaverous expression; the pulse becomes small and quick; cold clammy sweats ensue; and the patient is often affected with delirium.

2167. Mortification is caused by whatever impedes the circulation of the blood. Thus, when an intestine is protruded from the cavity of the abdomen, as in hernia or rupture, so as to cut off the supply of blood, the part will soon lose its vitality, and mortify. Mortification of the face in children is often produced by the use of mercury, and corrosive sublimate, and it also frequently follows the application of blisters, and mustard poultices. If we prevent the entrance of arterial blood into a limb it will soon mortify. "Palsy, conjoined with pressure, old age, or ossification of the arteries," says a medical writer, "may produce mortification; also cold, particularly if followed by the sudden application of warmth; and likewise excessive heat applied to a part."

2168. When a part is only partially destroyed—that is, while there is still a feeble circulation, and some sensibility—it is termed *gangrene* or the first stage of mortification; but when the blood ceases to move, and the part becomes cold, black, and destitute of all feeling, it is called *sphacelus* or mortification in the second stage.

2169. "Hiccough," says Sir Astley Cooper, "is the characteristic sign of gangrene, in whatever part of the body it is situated. The fact is, when gangrene arises from a diseased state of the constitution, the stomach is extremely deranged, and this derangement is followed by a spasmodic contraction of the diaphragm, producing hiccough."

2170. Treatment. When mortification is threatened, it can only be prevented by keeping up the circulation in the part affected; and for this purpose the system must be invigorated by

courses of medicine, making free use, in the intervals, of cayenne, bayberry, nervines, tonics, and injections. The courses may be repeated every twelve, twenty four, or forty eight hours, according to the circumstances of the case. As long as the patient is in a gentle perspiration, he may be considered as doing well, but if the skin becomes cold and clammy, or any other unfavorable symptom arises, either an emetic, or course of medicine should be administered without delay. The strength should be sustained by a light, nourishing diet.

2171. A poultice of Indian meal, or wheat bran, mixed with equal parts of vinegar and water, and containing a portion of ginger, or cayenne, may be applied externally, and renewed several times a day. This will prevent the gangrene from extending to the neighboring parts. The rheumatic drops, or tincture of myrrh may be added to the poultice with advantage. When the separation between the dead and living flesh takes place, the yeast poultice is an excellent application, as it not only hastens the separation, but corrects the offensive smell. (1548.) The charcoal poultice (1549) may also be used; or a poultice of equal parts of slippery elm and pounded cracker, mixed with raspberry or bayberry tea. At each renewal of the poultice, the part should be washed clean with warm soapsuds, followed by some mild astringent tea, such as pond lily, or witch hazel, or with the tincture of myrrh, diluted, if necessary, with water. If the part is hot and painful, the poultice should be wetted frequently with cold water. An occasional dose of composition tea will also serve to allay the pain; or if this is insufficient, lobelia may be added to the tea, but not in a sufficient quantity to excite unpleasant nausea. After the dead flesh is entirely removed, and the part assumes a healthy appearance, the healing salve may be applied.

MUMPS.

2172. This disease is principally confined to children, and prevails sometimes epidemically. It rarely occurs more than once in the same individual. It commences with a stiffness of the jaws, attended oftentimes by a feeling of restlessness, and a slight degree of fever. This is succeeded by a swelling of one or both sides of the neck, about the angles of the jaw, which frequently occasions difficulty of swallowing, and sometimes interferes with the respiration. The swelling is moveable at first, but soon becomes hard and firm. It increases until about the fourth day, when it begins to decline. The breasts in females and the

testicles in males are liable to become affected, and sometimes swell to an enormous degree.

2173. TREATMENT. The mumps is usually a very mild complaint, provided the patient avoids exposure to the cold. The swelling should be covered with a flannel, and bathed frequently with pepper sauce, rheumatic drops, or the antispasmodic tincture. The face should be washed in warm instead of cold water, as the latter is apt to cause a transfer of the swelling to the parts already named. Injections to free the bowels, if they are confined, and composition enough to keep the skin moist and of a natural temperature, is all the treatment that is generally required. If a violent fever should arise, however, or the testicles or breasts should swell, a course of medicine is to be given, or at least an emetic to cleanse the stomach. The breasts, or testicles, as the case may be, should be bathed several times a day with rheumatic drops, or volatile liniment, and a heated stone wrapped in several thicknesses of a damp cloth applied to them.

NETTLE RASH.

2174. This is an eruption of the skin, manifesting itself in blotches or elevations of a red color. It is attended by heat and itching of the parts, resembling the sting of an insect. In children it is called *hives*. It is most common in the spring and autumn, and is apt to appear when the body is overheated by exercise, or the skin irritated by scratching. In some instances, the patient complains of drowsiness, loss of appetite, nausea, and headach. It is caused by the use of wine, and ardent spirits; by particular kinds of food; by irritating applications to the skin; and more especially by overheating the system, and allowing it to cool suddenly.

2175. No part of the body is exempt from the disease, and where many of the blotches "rise together, and continue an hour or two, the parts are often considerably swelled, which particularly happens in the arms, face, and hands. The eruption infects the skin, sometimes in one place and sometimes in another, for one or two hours together, two or three times a day, or perhaps for the greatest part of twenty four hours. In some constitutions it lasts only a few days, in others many months."

2176. TREATMENT. Relief is afforded by giving cayenne or composition to produce a perspiration, aiding the medicine, if necessary, with the vapor bath. In case of drowsiness, or nausea,

an emetic should be given to cleanse the stomach. The patient should be particular about his diet, eating moderately, and avoiding the use of fat meat, butter, pastry, gravies, and all unwholesome mixtures. If there is nervous irritation, a tea of scullcap may be employed with advantage. Those predisposed to the complaint, should rub the skin every night and morning with a coarse towel, or flesh brush; and the hand bath would also be highly serviceable. (1455.)

NIGHTMARE.

2177. Nightmare occurs during sleep, and consists of an anxious or fearful dream. The individual fancies that some monster is pressing on his chest; or that he is endeavoring to escape from an assassin, or a furious wild beast, without the ability to speak, or move; or that he is about to be dashed to pieces by falling from a great height; or some other equally wild and horrible conceit. The respiration is impeded, and sometimes the patient is threatened with suffocation. The frightful sensations which are experienced, "generally originate in a large quantity of wind, or indigestible matter in the stomach, which, pressing the stomach against the diaphragm, interferes with the respiration, or renders it short and convulsed. Flatulent distention of the intestines may likewise produce similar results." The individual on awaking, often finds himself bathed in perspiration.

2178. TREATMENT. If an attack is feared, a tea-cupful of cayenne and scullcap tea, or from three to five lobelia pills, may be taken at bed time, and a jug of hot water wrapped in a damp cloth placed at the feet. This will keep the circulation active during the night, and generally prevent an occurrence of the malady. The individual should be particular, however, to avoid intemperance in eating, and particularly late or full suppers, and he will cease to be annoyed by the midnight intruder.

PALPITATION OF THE HEART.

2179. This disease is more common in the old than the young, and consists of a strong and irregular action of the heart, which is sometimes called *throbbing*, and when the action is more feeble, it is termed *fluttering of the heart*. During the attack, there is often difficulty of breathing, giddiness, nausea, fainting, and sometimes blueness of the lips. The palpitation is occasionally so

strong as to be heard by the bystanders. It occurs in nervous affections, such for example as hysteria, and is a symptom also of enlargement of the heart, and other diseases of this organ. It is a common result of blood-letting, and the use of digitalis. It often accompanies a disordered state of the stomach and bowels, especially in pregnant women, and is mostly brought on by severe exercise, and strong mental emotions. Injuries of the heart by violence, also give rise to palpitation. Dr. Good mentions the case of a French soldier, who was wounded by a musket ball passing into his breast, which was followed by troublesome palpitation of three years' continuance. In six years after the accident, he died of a complaint totally unconnected with the wound, and upon examination it was found that the ball which entered his breast was lodging in the right side of his heart.

2180. TREATMENT. The diplomatised physicians frequently pronounce the disease incurable, when, in fact, if they would cease to administer their drugs, the patient would speedily recover through the sanative operations of nature alone. Dr. Good, from whom I have just quoted, remarks, "It frequently happens, that a palpitation of long standing, and which has been regarded as of a dangerous kind, has gradually gone away of its own accord, and left us altogether in the dark." Dr. Cullen also mentions the case of a gentleman who suffered two or three years with violent palpitation of the heart, which was pronounced by many physicians absolutely incurable, but the disease gradually abated, and at length wholly disappeared.*

2181. In ordinary cases of palpitation, it will be sufficient to take a dose of spiced bitters before each meal, and one of composition, or cayenne and bayberry, containing a slight portion of lobelia, on going to bed at night. If the stomach is much disordered, it is to be cleansed with an emetic; and if the bowels are costive, an injection should be administered at least once a day. Where there is much nervous excitement, the lobelia pills, or a tea of scullcap, may be used advantageously. The food must be light and easy of digestion, and every thing avoided which has the slightest tendency to derange or oppress the stomach. (See remarks on diet, 1680, *et seq.*) Exercise in the open air will be beneficial, provided it is not severe, or fatiguing; and the patient should be careful not to indulge in fits of anger, or violent emotions of any description. Cold bathing, also, in some form or other, (1448, *et seq.*) is of great service, as it tends to invigorate the system, and thereby to remove the disease.

* Cullen's Materia Medica.

2182. If the patient is suffering under a severe attack of the disease, it may be relieved by the use of the stimulating tea, (1515) giving it in small and frequently repeated doses until perspiration ensues, and in the meantime placing heated stones wrapped in damp cloths at the feet and sides. The latter, or the vapor bath in its stead, are indispensable, in order to invite the blood to the surface of the body; otherwise the use of stimulants internally may increase rather than diminish the palpitation. So long as the skin is moist, and there is an equilibrium of the circulation, the patient will be free from suffering. In affections of the heart, I would particularly recommend the application of external warmth, and the use of lobelia in doses just short of producing nausea.

2183. If the palpitation is owing to an affection of the heart, or is dependent on some obstinate nervous disorder, a few courses of medicine will be required, repeating them according to the violence or urgency of the symptoms.

PALSY OR PARALYSIS.

2184. Palsy is characterised by a loss of motion and sensibility, and usually attacks one entire side of the body, but is sometimes confined to a particular part, as a hand, an arm, or a leg. Particular nerves are occasionally palsied, so that the patient is deprived of one or more of the senses. When the lower part of the body is the seat of the disease, the individual is apt to lose the control of the bladder and rectum.

2185. Palsy is often occasioned by apoplexy, inflammation of the brain, disease of the spinal marrow, and compression of the nerves in dislocations, fractures, or injuries of any description. Among the causes of the malady, are masturbation, excessive venereal indulgence, severe study, want of exercise, and intemperance in eating and drinking. The long continued application of sedatives, says a medical writer, will likewise produce palsy, as we find those whose occupations subject them to the constant handling of white lead, and those who are much exposed to the poisonous fumes of metals or minerals, are more or less subject to its attacks.

2186. "Palsy usually comes on with a sudden and immediate loss of the motion and sensibility of the parts; but in a few instances, it is preceded by a numbness, coldness, and paleness, and sometimes by slight convulsive twitches. When the head is much affected, the eye and mouth are drawn to one side, the memory and judgment are much impaired, and the speech is indistinct and

incoherent. If the disease affects the extremities, and has been of long duration, it not only produces a loss of motion and sensibility, but likewise a considerable flaccidity and wasting in the muscles of the parts affected."

2187. TREATMENT. Courses of medicine, repeated at proper intervals, will cure most cases of palsy—at least I have never known them to fail.

2188. The vapor bath of itself is a valuable remedy, and may be administered every other day, followed by an application of the stimulating liniment to the entire surface of the body. Care must be taken that the vapor is not too hot, however, for if there is a great loss of sensibility in the affected parts, it will sometimes do serious injury, even at a temperature that would be agreeable and pleasant under other circumstances. (1494.) I have known patients to be badly scalded through carelessness in this respect. The same remarks are equally applicable to heated stones, or bottles of hot water.

2189. Between the courses, cayenne, bayberry, and spiced bitters may be freely employed, to keep up an action in the system, and invigorate the digestive organs. Injections may be used advantageously two or three times a day, whether the bowels are costive or not. The lobelia pills, or alterative mixture, will be found of essential service as a part of the intermediate treatment. The diet must be regulated, eating those articles of food which are light, and easy of digestion, and taking care not to overload the stomach. (See remarks on diet—1680, *et seq.*)

2190. The affected parts should be rubbed frequently with pepper sauce, volatile liniment, or tincture of cayenne, the latter of which is preferable where there is great coldness, or loss of sensibility. Flannels wrung out of either of these liquids, and warmed by the fire, may also be applied, together with heated stones wrapped in damp cloths. The flannels may be renewed two or three times a day until the sensibility is restored.

2191. The surface of the body should be rubbed every night and morning with a coarse towel, or flesh brush, until the skin is in a warm and pleasant glow. Friction up and down the course of the spine, is, in many instances, particularly beneficial.

2192. If the paralytic shock has been caused by apoplexy, the same treatment should be pursued which is recommended under that head. (1749, *et seq.*)

PILES.

2193. These are tumors of various sizes, which are situated either within or at the verge of the anus, and consist of an enlargement or distention of what are termed the *hæmorrhoidal* vessels.* They usually commence with a tingling sensation in the anus, or perhaps a feeling of uneasiness or oppression, and if the individual is much upon his feet, or exercises severely, they speedily enlarge, and become excessively painful. They are known as *blind piles* when no blood is discharged, but otherwise, they take the name of *bleeding piles*. Sometimes they form a ring or cluster round the internal surface of the rectum, and interfere with the passage of the feces, causing severe pain and suffering. They are often forced down at stool, and in some instances are returned with difficulty. The mucous or lining membrane of the rectum, being in a relaxed or debilitated state, is also apt to protrude. The local irritation generally extends to the bladder, and causes a frequent desire to pass water.

2194. Piles are most common to persons in the middle period of life, and rarely occur in youth, or after the age of fifty. Pregnant women are very liable to them, and also persons of weak and relaxed habits of body. Purgatives are a fruitful source of them, and hence their prevalence since the introduction of Brandreth's pills. They are also caused by a sedentary life, the frequent use of strong coffee, lifting or carrying heavy burthens, and above all, by long continued costiveness.

2195. In some instances the piles become inflamed, and the inflammation terminates in an abscess, which arises in the middle of the tumor, and degenerates into a fistulous sore. In other cases, the inflammation terminates in a hardened or indurated mass, which sometimes ulcerates, and discharges a thin, acrid matter.

2196. The piles are so large in some instances, as to fill the rectum, and the excrements, if they are at all hard, cannot pass. Under these circumstances, the piles are forced out of the anus, at stool, in order to procure a free passage, and the internal coat of the rectum, as I have said, is naturally protruded with them. If the bleeding piles come down in this manner, they discharge a considerable quantity of blood, because the anus, by the contraction of its muscles, forms a kind of ligature above them.

2197. TREATMENT. Particular attention must be paid to

* For this reason, the piles, in medical language, are termed hæmorrhoids.

the bowels in this complaint, for if costiveness ensues, it will be rendered much more violent. Injections may be used once or twice a day, or any of the remedies may be employed to keep the bowels open which are recommended under the head of costiveness. (1896, *et seq.*) Food should be selected that will digest easily, and not oppress the stomach, such as preparations of Indian meal, ripe fruits, and especially the unbolted wheat bread. Apples are particularly beneficial, and may be eaten at each meal.

2198. If the piles are sore or irritable, a tea of raspberry, sumach, or witch hazel leaves, may be administered by way of injection, and as soon as the smarting ceases, a portion of ginger, cayenne, or rheumatic drops, may be added to the tea. The injections must, in all cases, be strained, or the sediment may occasion pain, and tenesmus. (1575.)

2199. The pile ointment (1313, *et seq.*) may be used externally with great advantage, spreading it on a piece of folded linen, and confining it to the part by means of a bandage in the shape of the letter T. Where the piles are situated at the verge of the anus, however, there is no one thing which gives such immediate relief as the application of a piece of cotton wool, previously moistened with the essence of spearmint. It causes a pungent or smarting sensation, and if the pain is severe, may be removed in the course of ten or fifteen minutes. The application may be repeated, if necessary. I have prescribed this remedy in numerous instances, and scarcely ever knew it to fail in producing the desired effect.

2200. From two to five lobelia pills, taken at bed time, with a dose of composition tea, are highly useful, as they are generally followed by an easy stool the next morning.

2201. If the piles have been neglected for a long time, and the general health is much impaired, it will be necessary to administer courses of medicine, repeating them according to the circumstances of the case. Injections should be employed two or three times a day between the courses, particularly if there is an acrid discharge from the rectum.

PLEURISY.

2202. Pleurisy consists of an inflammation in the membrane which covers the lungs, and lines the cavity of the chest. An acute pain arises in one or both sides, which is increased by coughing, or upon taking a full breath. The skin is usually hot and dry, the pulse hard and frequent, the tongue covered with a thick, white coat, the countenance flushed, and the urine scanty

and of a deep red color. The patient does not lie upon the affected side, but generally throws himself upon his back, as the most easy and comfortable position. Cough is not an invariable symptom, but when present, is either dry, or accompanied with a slight discharge of nearly transparent matter. In case the inflammation attacks the substance of the lungs, however, the matter expectorated is generally mixed with blood.

2203. Pleurisy mostly occurs in persons of a full and robust habit, and is generally caused by exposure to cold, whereby the blood is thrown in an undue quantity upon the internal organs.

2204. The lungs, in consequence of the inflammation, sometimes adhere to the sides of the chest, but this is not considered a serious accident, for it does not interfere with the respiration.

2205. TREATMENT. The treatment which was recommended for inflammation of the lungs, is equally applicable in pleurisy. (2127, *et seq.*) Medicines are to be given to produce a determination to the surface of the body, and as soon as the patient begins to perspire freely, he will generally experience relief. Cayenne and bayberry tea, lobelia in small doses, injections, and the application of heated stones wrapped in damp cloths to the feet and sides, are each important. In violent attacks, our chief dependence must be upon full and thorough *courses*.

2206. As an application to the side, I have found the following extremely beneficial. Take equal parts of cayenne and brown lobelia, and make them into a paste with healing salve, meadow fern ointment, or lard. Spread this on a piece of linen of the proper size, and confine it to the region of the pain with appropriate bandages. The stimulating liniment will also answer a good purpose; or flannels wrung out of warm rheumatic drops, volatile liniment, or vinegar and cayenne, (1531) may be applied, together with a heated stone, as already directed. The stone itself will frequently suffice to allay the pain.

2207. After the disease is removed, the patient should not expose himself to a cold or damp atmosphere, until his lungs become strong and vigorous, or he will be in danger of a relapse.

POISONING.

2208. This is occasioned by a variety of mineral and vegetable substances, such as arsenic, corrosive sublimate, calomel, sulphate of zinc, tartar emetic, sulphuric and nitric acids, antimony, sugar of lead, nitre, prussic acid, opium, laudanum, digitalis, poison hemlock, belladonna, and so on to the end of the chapter. They act

either by irritating, or corroding the stomach and bowels, or by stupifying the brain and nervous system, giving rise to drowsiness, stupor, and frequently convulsions.

2209. Persons are often killed through the carelessness of the apothecaries, who give them some deadly poison instead of the article for which they enquire. Mistakes of this kind are of frequent occurrence.

2210. Arsenic is a well known poison, and is more frequently employed than any other for criminal purposes. In a large dose it is apt to excite vomiting, and may be discharged from the stomach without doing material injury. When not thus ejected, it frequently destroys life in a few hours. Among the symptoms which mark its progress, are a burning sensation in the throat, excessive vomiting, dizziness, griping pains in the stomach and bowels, purging of blood, hiccough, difficulty of breathing and swallowing, livid and bloated countenance, great debility, fainting, insensibility, cold sweats, palsy of the limbs, and convulsions.

2211. The narcotic poisons, such as opium, give rise to drowsiness, stupor, a loud or snoring respiration, pale or livid countenance, great relaxation, insensibility of the eye to light, and sometimes vomiting and convulsions. Death often takes place very speedily.

2212. Treatment. Vomiting should be produced without delay, so that the poison may be ejected from the stomach, and there is no emetic, with which I am acquainted, that will operate more speedily and effectually than lobelia. It may be employed in any of its forms, and should be given in full and frequent doses until the desired effect is produced. During the operation, warm teas should be given freely to wash out the stomach. Slippery elm tea may also be employed with great advantage, both during the continuance of the vomiting, and for several hours after it has ceased. If the poison is followed by soreness or inflammation of the stomach, it will be advisable to administer a course of medicine.

2213. About a year ago, a gentleman of Boston staggered into one of the infirmaries in that city, and said that he had injured himself by a fall. He was slightly delirious. His face was swelled, and of a livid color. In a short time he became insensible. A tea-cupful of composition tea, containing a tea-spoonful of brown lobelia, was poured down his throat in table-spoonful doses. In five minutes he vomited, and discharged a large quantity of dark colored matter. He then stated his suspicions that his wife had given him arsenic, which she had attempted to do once before. During the night, he frequently became drowsy, or stupid, but

was as often revived by the composition and lobelia, as mentioned above. In the morning, a thorough course of medicine was administered, which afforded almost entire relief. The patient complained of difficulty of breathing for two or three days, after which he recovered his usual health.

2214. If poisoning is produced by an alkali, it may be neutralized by an acid, as vinegar, or lemon juice and water, and thereby rendered inert.

2215. If an essential oil has been swallowed, it may be rendered comparatively harmless by taking a portion of brandy, or other spirit. These antidotes should be immediately followed by an emetic to cleanse the stomach.

QUINSY, AND PUTRID SORE THROAT.

2216. *Quinsy or inflammatory sore throat* is very common in the spring and autumn, when the weather is changeable. It commences with chilliness, which is succeeded by fever, and pain in swallowing. As the disease advances, the swallowing becomes exceedingly difficult, if not impracticable, and the throat and tongue are often so much swelled as to destroy the voice, and render the breathing laborious. The pain in the throat is severe and darting, and frequently extends to the ears. The mouth is dry, and the tongue covered with a white, or dark coat. Sometimes the eyes are inflamed, and the face red and bloated. Where the inflammation is not checked in season, little ulcers form in the throat, which increase the sufferings of the patient, and render the case tedious and distressing.

2217. The complaint is caused by exposure to a damp or chilly atmosphere, wet feet, standing on the cold ground, wearing damp clothes, and by the irritation of indigestible food in the stomach. Persons who have had one attack, are extremely liable to a second. Salivation, says Dr. Eberle, appears to create an increased aptitude to the disease.

2218. *Putrid sore throat* prevails sometimes as an epidemic, and is often an attendant upon scarlet fever. It commences with chilliness, and sometimes nausea and vomiting, with the usual symptoms of a sore and inflamed throat. The breath becomes offensive, the neck is occasionally stiff, and dark looking ulcers are seen in the mouth and throat. The tongue is covered with a brown, or black coat. The inflammation often extends to the ears, producing deafness, and sometimes to the brain, causing delirium, or stupor. Dark colored spots make their appearance, in some cases, about the face, neck, and other parts of the body.

The fever is violent, and generally increases towards evening. If the disease is not arrested, it tends rapidly to putrefaction. Copious diarrhœa ensues, accompanied by great prostration, and not unfrequently a discharge of blood from the mouth, nose, and other free passages.

2219. Treatment. In violent attacks of these complaints, courses of medicine should be given, repeating them according to the urgency of the case. It is sometimes necessary to administer two or three courses in twenty four hours. The treatment in *quinsy*, however, does not require to be so active as that in *putrid sore throat*. In mild cases of the former disease, a free use of composition, or cayenne and bayberry, with an occasional injection to keep the bowels open, will often effect a cure. Slightly nauseating doses of lobelia are highly serviceable in allaying the inflammation. The best form of this medicine is the stimulating tea. (1515.)

2220. If the patient is unable to swallow, an injection containing a tea-spoonful of green lobelia (1567) may be administered, repeating it once or twice until it produces the requisite degree of relaxation. Cayenne and bayberry tea should then be given, followed by the vapor bath, and all the requisites of a full and thorough course of medicine. It is sometimes necessary to adminster all the medicines by way of injection. A case of this kind is detailed in paragraph 1555.

2221. The various teas should be administered without the sediment, straining them through a cloth, or fine seive.

2222. The throat should be frequently gargled with bayberry tea, followed by a weak infusion of cayenne. This will detach large quantities of offensive matter, and afford great relief.

2223. Breathing the fumes of vinegar, or the vapor of water, is productive of benefit.

2224. Pepper sauce is a useful medicine in affections of the throat; or in the absence of this, the following preparation may be used. Take of cayenne a tea-spoonful and a half; fine salt half a tea-spoonful; boiling water a tea-cupful. Steep fifteen minutes, and add a tea-cupful of good cider vinegar. A table-spoonful of this may be given every fifteen minutes or half an hour, as the case may seem to demand. It is pleasant to the taste, and highly salutary in its effects. In some instances, the salt may act as a purgative, and if so, it should be omitted from the preparation.

2225. External applications to the throat are important, and among these, I know of none better than a mixture of vinegar and cayenne, simmered for a few minutes over the fire. The throat should be rubbed with this liquid for ten or fifteen minutes, and

a flannel moistened with it, tied round the neck. The application may be renewed several times a day. It is a valuable remedy in all cases of sore throat. In some instances it produces severe smarting, while in others it only causes a pleasant sensation of warmth.

2226. Raspberry, or barberry jelly, (852, 997) dissolved in water, makes a refreshing and cleansing drink in inflammatory, or putrid sore throat, and is particularly useful during convalescence.

2227. A case of putrid sore throat came under my observation in Boston, in which courses of medicine afforded little or no relief, the breathing being difficult, and the patient complaining of great fulness in the throat. The tincture of lobelia was given in the dose of a tea-spoonful, every few minutes, and in this way he swallowed at least three wine-glassfuls without vomiting. He expectorated more than a quart of yellow and offensive matter, however, which relieved the urgent symptoms, and then, by the administration of another course, he was restored to the full enjoyment of health.

RHEUMATISM.

2228. Rheumatism is generally produced by the influence of cold, and consequently is most prevalent when the weather is damp and variable. It commences with chilliness, followed by flushes of heat, and a quick and strong pulse, which varies from one hundred and twenty to one hundred and forty beats in a minute. The pain is very acute, and mostly confined to the larger joints. The parts are frequently red, swollen, inflamed, and extremely tender to the touch. The skin is hot and dry, the appetite impaired, the thirst excessive, the urine scanty and high colored, and the tongue covered with a white, or brown coat. The bowels are generally costive. Sometimes there is headach and redness of the eyes, and in some instances a vomiting of bilious matter. The muscles about the ribs are occasionally affected, so that the patient imagines himself to be laboring under an attack of pleurisy. The pains are sometimes fixed, and at others wandering, changing from one part of the body to another within twenty four hours, and if the disease is improperly treated, they are not unfrequently transferred to vital organs, such as the brain, heart, stomach, bladder, and womb, producing serious, and even fatal consequences.

2229. Rheumatism is frequently caused by the use of mercury, which deranges the whole system, and renders it extremely susceptible to the effects of cold. In the Southern States, where

calomel is employed freely in fevers, *mercurial rheumatism*, as it is termed, is a very common complaint.

2230. Treatment. The medical faculty, according to their own confessions, appear to be entirely ignorant of the proper treatment to be pursued in rheumatism. Dr. Mackintosh, in his Practice of Physic, remarks, "One set of practitioners depend entirely upon blood-letting; another upon purging; a third upon exciting long-continued profuse perspirations; a fourth upon the exhibition of bark alone; and a fifth upon a course of mercury to produce salivation. It is no wonder, therefore, under such empirical treatment, that an attack of the disease used formerly to continue violent for such a long period of time. Formerly an attack of acute rheumatism, with its consequences, generally confined the patient for twelve months, that is to say, before he regained his ordinary state of health, and few got off with less than six months' confinement to bed."

2231. Dr. Mackintosh also condemns "the calomel and opium treatment" in rheumatism, which is so fashionable at the present day, observing that he has "often seen the tongue of patients swollen and ulcerated, and profuse salivation produced, without the least signs of amendment."

2232. With regard to the "perspirations" which are objected to in the above paragraph, we are informed by Dr. Mackintosh, that they were produced by "a load of bedclothes," and "large and repeated doses of Dover's powder." Now as this powder is a poisonous preparation, being composed of *ipecac*, *opium*, and *sulphate of potassa*, it need not excite our surprise that the "perspirations" proved injurious, and indeed it is fortunate that the patients even survived the treatment. Perspiration which results from the use of pure, healthy stimulants, however, together with the vapor bath, will always have a beneficial effect.

2233. There is no disease, perhaps, in which the reformed practice produces such extraordinary results as in rheumatism. It relieves the most excruciating pains in a few hours; and I have known patients who had been crippled for years, to be restored to the use of their limbs, as well as the enjoyment of health, by two or three courses of medicine.

2234. A mild attack of the complaint may often be cured by rubbing the affected part two or three times a day with the rheumatic drops; or by giving a tea of composition, or cayenne and bayberry, until perspiration ensues; or by the administration of a vapor bath, together with one or two injections to evacuate the bowels. In an obstinate, or chronic case, however, particularly if it has been caused by mercury, it is usually necessary to administer

courses of medicine, repeating them at proper intervals, until the disease is removed. Between the courses, the patient must avoid exposure to cold, keep his feet warm and dry, dress according to the season and climate, and make use of the ordinary stimulants and tonics, according to the circumstances of the case. (1660, *et seq.*) If the bowels are costive, an injection should be administered once or twice a day. Lobelia pills, both during the day, and at night on going to bed, will be beneficial. The affected parts may be bathed frequently with vinegar and cayenne, (1531) antispasmodic tincture, volatile liniment, or, if there is a loss of sensibility, with the strongest tincture of cayenne; and if this does not afford the desired relief, flannels wrung out of either of these liquids, and warmed by the fire, may be applied, together with a heated stone, or bottle of hot water, wrapped in a damp cloth.

2235. If the weather is chilly, or if the individual possesses but little animal heat, the entire surface of the body may be rubbed after each course of medicine with the stimulating liniment. (1306, *et seq.*)

2236. The diet should be nourishing and easy of digestion. Many an attack of rheumatism has been prolonged by overloading the stomach, and eating gross and improper food, notwithstanding tolerably efficient treatment.

RICKETS.

2237. This disease is characterized by softening and distortion of the bones, and seldom appears before the ninth month of infancy, or later than the third year. The flesh becomes soft, the head enlarges, the breast bone protrudes, and the limbs waste away. The spine is distorted, having a curve like the letter S. The countenance is pale, and the cheeks sallow, accompanied by emaciation, debility, cough, disinclination to motion, difficulty of breathing, and swelling of the abdomen.

2238. TREATMENT. The disease is one of extreme debility, and is dependent, no doubt, on a highly disordered state of the digestive organs. Hence the bones are imperfectly nourished, and losing the earthy matter which gives them strength and hardness, (17) they easily bend under the weight of the body. No time should be lost, therefore, in adopting the necessary treatment to restore the health, and invigorate the general system, for, although the life of the child may be saved, it may, from the soft and yielding state of the bones, become hopelessly deformed. Besides, if the patient

is a female, malformation of the pelvis may ensue, which is no uncommon thing in rickety children, and in the event of pregnancy, her life may become a sacrifice from the difficulty attending parturition.

2239. The system must be invigorated with the bitter or restorative medicines, pure air, and a wholesome, nourishing diet. Tea, coffee, butter, rich cakes, pastry, white bread, oily or greasy substances, and many similar articles with which children are surfeited by their fond and anxious parents, should be sedulously withheld from the patient. Milk, ripe fruits, the unbolted wheat bread, wheat jelly, slippery elm boiled in milk, (1431) and preparations of oatmeal, Indian meal, sago, rice, and tapioca, may all be used to advantage. The child must be kept clean, and proper means taken to give it plenty of exercise in the open air. Its skin should be rubbed every night and morning with a coarse towel, or flesh brush. The bowels are generally disordered, and should be evacuated once or twice a day with injections. The alterative mixture, (1526) and compound for children, (1528) will both be found very useful internal remedies. Equal parts of composition and spiced bitters, also, is an excellent form of medicine. Half a tea-spoonful of this powder, and double the quantity of sugar, mixed with half a wine-glassful of cold, or lukewarm water, may be taken in substance, three times a day. In addition to this treatment, the stomach, if it is much disordered, should be cleansed once or twice a week with an emetic of lobelia, preceded by an injection, and the vapor bath.

2240. Care must be taken to prevent curvature of the spine. "For this purpose," says Sir Astley Cooper, "it has been the practice to keep children in the recumbent posture for a great length of time. This is a plan which I by no means advise; exercise should be freely allowed, taking care only that it be not protracted so as to occasion fatigue. At the same time that exercise is taken, you must preserve the spine in a straight position by giving it artificial support. This may be effected by two springs of steel added to the stays, one on each side of the spine, which may be worn by the patient in any position. In the use of mechanical means, however, the great object should be, not to force the child into a constrained position, but merely to prevent inclination on one side or the other."

2241. Whatever advantage may be derived from giving artificial support to the spine, I suspect, after all, that the best mode of treatment, is, to increase the tone and vigor of the muscles, which will be far more effectual in preventing deformity, than steel springs, or any other mechanical contrivance. Nevertheless, I am persuaded that cases occur, in which artificial support is pro-

ductive of beneficial results, yet it can avail but little, unless the general system is strengthened and invigorated by attention to diet, and correct medical treatment.

2242. The body should be prevented from pressing upon the lower extremities, until the bones have acquired sufficient solidity and firmness to support the weight. This remark is applicable to infants generally, and not to those only affected with the rickets. Mr. Combe says that parents generally delight to see their infants "run alone" at as early an age as possible, and use many methods to induce them to stand and walk. "The bones," he adds, "which are the frame-work of the body, do not become perfectly solid till near twenty years after birth. In very young children, bones are but pliable gristle, and by pressure, or the support of weight, are bent from their natural shape. When the child stands, its whole weight is thrown on the bones of its legs, which at too early an age are not firm enough for its support, and they are thus liable to be bent. If let alone, nature will prompt the infant when to rise up. It will not continue to creep till the age of four-score, as some seem to imagine."

RINGWORM.

2243. This is an eruption of the skin, appearing in circular patches of a deep red color, having a number of very minute pimples or blisters around the circumference. It is most frequent in children, occurring usually about the face, neck, and shoulders, and is attended with a troublesome itching. When the circles are large, the skin in the centre has a healthy appearance, but otherwise it is reddened, somewhat elevated, and roughish. The pimples break in four or five days, followed by thin brownish crusts, which finally scale off. In many cases, however, there are frequent renewals of the eruption, which protract the disease for many weeks, and even months.

2244. TREATMENT. Keeping the part clean with soap and water, bathing with rheumatic drops, or the antispasmodic tincture, and applying healing salve, or meadow fern ointment, to exclude the air, is probably the best treatment that can be pursued. Rheumatic drops and the red powder or dust of sumach berries, form a superior wash in this complaint. It may be applied several times a day, followed by the ointment as already directed. The root of yellow dock, simmered in cream, as recommended for the itch, is also an excellent remedy.

RUPTURE OR HERNIA.

2245. When a portion of the intestines is protruded from the abdomen, forming a tumor or sac under the skin, it is called a rupture.

2246. This protrusion may take place at various parts, but it generally occurs at the groin, and inner part of the thigh.

2247. There is an opening through the muscles at the lower part of the abdomen for the passage of certain vessels which go to the testicles in the male, and to the genital organs in the female; and if this aperture is unusually large, or the parts are in a weak or relaxed condition, a portion of intestine may escape through it, and form an enlargement, swelling, or otherwise a *hernia*. Sometimes the protruded portion descends into the scrotum, and then it takes the name of *scrotal hernia*. If it does not descend thus low, it is known as *inguinal hernia*.

2248. Rupture in females most commonly takes place at the inner part of the bend of the thigh, the intestine forcing itself through the aperture which gives passage to the blood-vessels leading to and from the lower extremity. This, both in the male and female, is called *femoral* or *crural hernia*.

2249. When the bowels protrude at the navel, it is designated *umbilical hernia*, and when from any other promiscuous point in front of the abdomen, *ventral hernia*.

2250. The membrane which lines the cavity of the abdomen always makes a part of the hernial sac, because it is necessarily pushed before the intestine, as the latter escapes from the abdominal cavity.

2251. The rupture is increased in size by coughing, but is diminished by pressing upon it with the fingers. In lying down it almost entirely disappears. If long neglected, it may form adhesions to the parts with which it is in contact, so that it cannot be returned; or it may become inflamed and swollen, so as to interrupt the circulation of the blood, as well as the passage of the feces. In the latter case there is more or less danger, the patient experiencing severe pain, and being attacked, in most instances, with nausea and vomiting. If the intestine is not returned, mortification ensues, accompanied with cold, clammy sweats, and a sudden abatement of the pain and swelling.

2252. Among the causes of rupture, besides general weakness or debility of the system, are running, jumping, lifting heavy weights, wearing tight apparel, straining at stool, and parturition.

2253. A hernia or rupture is said, in medical language, to be either reducible, irreducible, or strangulated. These terms are

thus explained by Sir Astley Cooper. It is *reducible*, when the protruded bowels lie quietly in the sac, and admit of being readily put back into the abdomen; *irreducible*, when the protruded bowels suffer no constriction, yet cannot be put back, owing to adhesions, or their large size in relation to the aperture through which they have to pass; and *strangulated*, when the hernia not only cannot be reduced, but suffers constriction also; so that, if a piece of intestine be protruded, the pressure to which it is subjected, stops the passage of its contents towards the anus, excites inflammation of the bowels, and brings on a train of alarming and often fatal consequences.

2254. Treatment. When a rupture is first discovered, it should be returned gently with the fingers, and the intestine prevented from protruding again, by applying a roll of cotton, or something of like nature, to the part, and maintaining it there with a bandage. This can be easily done by a person of common ingenuity, and at very little expense. Those who can afford a truss, however, had better procure one, as this, if properly adjusted, is in every respect convenient and comfortable to the wearer. Among the various trusses which have been invented of late years, I know of none that I am disposed to recommend more highly than those of Dr. Fletcher of Boston.

2255. If the health is much impaired, it must be reinstated by the use of composition, spiced bitters, injections, and other appropriate remedies; or if necessary, by the administration of a few courses of medicine.

2256. It may be impossible to reduce a hernia, on account of an adhesion, and yet it is not to be considered dangerous, so long as inflammation and swelling do not arise. Every precaution should be taken, however, not to increase the difficulty, either by injuries, violent exercise, or inattention to the health.

2257. A strangulated hernia cannot be returned until the inflammation and swelling are subdued, and this may be speedily and effectually accomplished by the administration of a course of medicine. When the system is sufficiently relaxed by the lobelia, the protruded bowel is to be returned very gradually, taking care to do it gently, and without using force, for it would be better to occupy an hour or two in the operation, than to perform it with undue haste, or violence. After the reduction is accomplished, the patient should wear a truss, or compress and bandage, as previously directed, to prevent a repetition of the accident. In replacing the protruded intestine, the patient should lie upon his back, with his thighs bent upon his body, and his head and shoulders elevated with pillows. This position is avorable to a relaxation of the muscles of the abdomen.

2258. Surgical operations should not be tolerated in this complaint, for patients are frequently destroyed by the unhallowed knife of the surgeon, who might have been readily cured by judicious medical treatment. There is not only danger of severing an important artery, but also of cutting into the intestines, in which case the patient's life becomes a sacrifice. Death frequently ensues also from inflammation which arises as a consequence of the operation.

2259. In infants, the bowels not unfrequently protrude at the navel, and in that case, the difficulty is to be obviated by the application of a compress and bandage, as directed above.

SALIVATION OR MERCURIAL DISEASE.

2260. Salivation is produced by mercury, and its preparations, and is one of the most fearful maladies to which the human system is liable. Sometimes it is speedy in the work of destruction, and at others, dooms the patient to slow and lingering torments. The symptoms cannot be better described than in the language of Dr. Good, who says, "There is not only a high degree of irritation of the mouth, but of the system generally; great debility; emaciation; stiff, incurvated limbs; total loss of teeth; failure of the appetite; sore throat; sleeplessness; swollen tongue; offensive breath; eruptions of the skin; and fetid ulcers in the mouth." I may add, that the gums often become putrid; the soft parts about the mouth frequently mortify; and even the bones, particularly those of the jaws, are frequently destroyed. Terrible cases of salivation occur in infants at the breast, in consequence of the mother having taken mercury by the direction of her physician. For further information with regard to the dreadful effects of this poison, the reader is referred to the remarks on mercury, in another place. (423, *et seq.*)

2261. TREATMENT. Courses of medicine are requisite in this complaint, for in no other way can the mercury be expelled from the system. They may be repeated daily, or only once a week, according to the symptoms, until a cure is effected. The mouth should be washed frequently with bayberry tea, followed by a weak infusion of cayenne, in order to detach and remove the unhealthy secretions. Injections once or twice a day are necessary to regulate the bowels; and spiced bitters, or some other tonic, should be given freely to invigorate the digestive organs.

2262. Hoarhound tea has been highly recommended as a remedy in salivation. Dr. Withering cured a young man with it

in a short time who had been suffering from the effects of salivation for a year. (1122.)

2263. Where mercury has been taken, the face is liable to swell during the administration of a *course;* and to afford relief, a heated stone wrapped in a damp cloth, and wetted with vinegar, should be placed near the face under the bedclothes, and as soon as the skin becomes moist, the swelling will abate.

SCALD OR SCALLED HEAD.

2264. This is a peculiar eruption of the head, which extends in some instances to the face. It is accompanied by troublesome itching, and a thick, offensive discharge, which glues or mats together the hair, and forms into yellowish, or greenish scabs. It is mostly confined to children, but now and then makes its appearance in adults. The matter is sometimes so acrid as to excoriate the skin, and if it comes in contact with the eyes, produces redness and inflammation. There is sometimes a fetid discharge from the ears, and occasionally an enlargement of the glands on the sides of the neck, giving rise to tumors or kernels beneath the skin.

2265. TREATMENT. It is advisable to administer one or two courses of medicine, for although the disease manifests itself locally, it is dependent on a disordered state of the general system; and unless the fountain is purified, it will continue to send forth streams of muddy water. Between the courses, composition, spiced bitters, and enemas, may be used according to the necessity of the case. Among the preparations which may be beneficially employed, are the alterative mixture, (1526) the compound for children, (1528) and the tea for impurities of the blood. (1518.) The diet must receive attention, avoiding butter, meat, tea, coffee, and the fine flour bread. (See remarks on *diet*—1680, *et seq.*)

2266. The head should be thoroughly washed every night and morning with a sponge and warm soapsuds, followed by a tea of bayberry, pond lily, witch hazel leaves, or any other of the astringents. The bayberry is preferable, if its pungency is not an objection. An application is then to be made of meadow fern ointment, and if the parts are not too sensitive, it may be mixed with a small portion of rheumatic drops. The head is next to be bound in a cloth, or covered with a bladder, or cap, to favor perspiration, and keep the skin moist, using the warming medicine internally to produce a determination to the surface of the body. Before the head is dressed, a dose of composition should

be given. If the meadow fern ointment cannot be obtained, the nerve ointment will answer a very good purpose, or equal parts of pulverized gum myrrh and the red powder of sumach berries, with lard sufficient to make an ointment, may be employed.

2267. During the administration of a course of medicine, a poultice of sliperry elm should be confined to the affected parts, if possible, so as to absorb the discharge, which might otherwise inflame the healthy skin, and cause an extension of the disease.

SCARLET FEVER.

2268. Scarlet fever is a contagious disease, and attacks children more frequently than adults. It occurs at all seasons, but is most prevalent in the autumn, and early part of winter, rarely appearing in the same individual a second time. It commences with languor, chilliness, depression of spirits, and pains in the head and back, which are soon followed by a hot and dry skin, and sometimes nausea and vomiting. In about two days, a scarlet eruption makes its appearance on the face and neck, and in the course of twenty-four hours, diffuses itself over the whole body. It gives to the skin a peculiar red appearance, which has been compared to the shell of a boiled lobster. Sometimes it is universal, while at others, it is only to be seen in patches, leaving the intermediate skin of a natural color. It acquires a more florid hue in the evening, but diminishes in redness toward the morning. The face is usually swelled, and sometimes the throat is sore. The tongue is covered with a thick, white coat in the middle, but is of a deep red color at the point, and along the edges. Delirium is not unfrequent in the evening. In five or six days the eruption begins to fade, and mostly disappears in the space of forty eight hours, accompanied by a separation of the cuticle or outer skin, in the form of scales.

2269. In the more aggravated form of scarlet fever, the throat becomes red and very much inflamed. The voice is hoarse, and the swallowing painful and difficult. The patient sometimes cannot speak above a whisper. The thirst is urgent, the skin excessively hot, and the tongue red and dry. The eruption comes out irregularly, and not until the third or fourth day from the commencement of the disease. Sometimes it suddenly disappears, and then returns after a limited time. The neck is apt to be stiff, painful and swollen. If the fever and inflammation are not checked, little ulcers form in the throat, which assume a grayish color, and render the breath offensive. Among other symp-

toms which frequently arise, are diarrhœa, vomiting, soreness of the bowels, and sometimes delirium, or stupor.

2270. The disease occasionally puts on a malignant type, and tends rapidly to putrefaction. The eruption assumes a dark or livid color, accompanied with dull and inflamed eyes, small and feeble pulse, dark and fetid ulcers in the throat, offensive breath, rattling and oppressed breathing, great prostration, copious discharges from the bowels, deafness, bleeding from the nose, mouth, or other free passages, and delirium, or stupor almost from the commencement of the attack.

2271. Scarlet fever is sometimes confounded with the measles, but it may be distinguished by the eruption, which is different in color and appearance from that of the measles, and by other characteristic signs. (See paragraph 2155.) The distinction, however, is of no practical importance, for the indications of cure are the same in both diseases, each requiring to be treated on the same general principles.

2272. Among the symptoms indicating an unfavorable termination in scarlet fever, are involuntary discharges from the bowels, a copious flow of urine, cold extremities, purple spots on any part of the body, great prostration, stupor, and constant delirium; whereas, a moist, clean tongue, a more full and regular pulse, and a scaling off of the cuticle, are evidences of a return to health. It is a more favorable symptom, also, when the eruption is of a bright red color, and uniformly diffused over the surface, than when it is in patches, and very faint, or of a purple or livid aspect, appearing first on one part and then upon another.

2273. Treatment. If the symptoms are mild, the treatment recommended for measles, in paragraph 2158, will be sufficient, aiming to keep a constant determination to the surface of the body. If the skin becomes hot and dry, however, it will be necessary to administer a course of medicine, followed by a free use of cayenne and bayberry tea, and an injection every half hour, or hour. If, notwithstanding this treatment, it is impossible to keep up a perspiration, and the fever returns, the course must be repeated without delay, and so on until the disorder is removed. By keeping the fever in subjection from the commencement of the attack, soreness of the throat may be obviated, or if it becomes inflamed, it may be prevented from passing into a state of ulceration. Hence it is always better, if the symptoms are at all unfavorable, to resort to active treatment at the very outset of the disease. The stimulating tea, increasing the quantity of cayenne and lobelia, if necessary, is an excellent medicine to keep up the moisture of the skin.

2274. Where the surface of the body is inordinately hot, sponging it with cold water will have a highly beneficial influence. Professor Eberle remarks, that this is the only *sudorific* and *anodyne* which will not disappoint the practitioner. It is often followed by a free perspiration, and renders the patient easy and comfortable. It should never be employed, however, excepting where the skin is very hot and dry. Cayenne or composition should be given in the meantime, to keep a determination to the surface.

2275. If the throat is sore, or the swallowing difficult, the same treatment may be pursued which is recommended under the head of *quinsy*. (2220, *et seq.*)

2276. If the disease assumes a malignant type, relief can only be obtained by thorough courses of medicine, repeating them as often as the symptoms become alarming, and making free use of the stimulating tea in the intervals to keep up a perspiration. Injections are also important.

2277. Where the bowels are sore, or very much distended with wind, applications are to be made to the abdomen as directed in paragraph 2095.

2278. The sick chamber should be frequently ventilated. (1631, *et seq.*)

2279. During convalescence, the patient must avoid exposure to cold, and recruit his energies by the use of the bitter or restorative medicines, and a light, nourishing diet. The wheat jelly, or unbolted wheat meal gruel should be eaten, to regulate the bowels. Advantage will be derived from rubbing the skin every night and morning with a coarse towel, or flesh brush, until it is in a warm glow. Gentle exercise in the open air, provided the weather is mild and pleasant, will have an invigorating effect. (1709, *et seq.*)

2280. Deafness of one or both ears occasionally follows scarlet fever, but is not generally of long continuance. The ears should be filled with wool, or cotton, moistened with rheumatic drops, or the antispasmodic tincture, to exclude the air. Syringing the ear once or twice a day with warm raspberry tea, is also beneficial. (1917.)

2281. In the old school practice, a failure of the voice is often a sequel of scarlet fever, but I have never known it to occur in the reformed practice. In some instances it continues during life. The difficulty may be easily remedied at the commencement, however, by one or two courses of medicine.

SCROFULA OR KING'S EVIL.

2282. In scrofula, there is great derangement of the stomach and bowels, and the whole system is more or less affected. Small moveable tumors or kernels are felt under the skin, in various parts of the body, but particularly along the neck. The upper lip, and sides of the nose, are swelled. In children of a scrofulous habit, sores, and scaly eruptions are often observed about the face, and behind the ears. It is asserted that the disease is principally confined to those with a delicate skin, and light hair and eyes, but there does not appear to be any adequate foundation for this opinion.

2283. When the tumors first make their appearance, they are free from pain, and the skin covering them is of a natural color. They may remain in this condition for two or three years, without causing the patient any inconvenience, or they may enlarge and suppurate in a much shorter time, acquiring a reddish, or purple color, and finally discharging matter, which is sometimes extremely acrid or corroding.

2284. The eyes are often inflamed in scrofula, and the internal organs, such as the heart, liver, kidneys, brain, and lungs, become the seat of the scrofulous humor. The joints, also, especially those of the elbows and ancles, are liable to swell and suppurate.

2285. Whatever deranges the health, or causes debility of the general system, has a tendency to produce the disease. Hence it is of frequent occurrence in the old school practice, in which mercury, and other poisons are freely employed. It is common among the poor, arising from unwholesome food, want of cleanliness, and deficiency of clothing. Medical writers assert that pigs, rabbits, and other animals may be rendered scrofulous in a short time by giving them very coarse food. A cold, damp, and changeable atmosphere, predisposes to the disease. It also frequently attacks persons working in factories, where the air is pent up and unwholesome.

2286. The medical faculty are very unsuccessful in the treatment of scrofula, as one may well imagine, who takes into consideration the agents which they employ. Dr. Cullen says, "We have not yet learned any practice which is certainly or even generally successful in its cure." Dr. Mackintosh, in his Practice of Physic, remarks, "We are told by almost every author, 'to correct the bad habit of body,' and improve the state of the constitution; but, as far as I am aware, we have never yet been told a proper method to bring about this desirable event, or indeed, in

what the bad habit of body consists." Professor Hayward of Harvard University, after observing to his class, that "the excessive use of mercury is supposed to develope scrofula," remarked, "Almost every article of the materia medica has been tried in the disease, and abandoned; and sometimes patients recover their health under any mode of treatment, provided it be not too severe or violent."

2287. TREATMENT. Thorough courses of medicine are required in this affection, for while the bowels are torpid, the digestion imperfect, the skin and liver inactive, and the circulation feeble or languid, it is impossible that there can be a permanent change for the better; but in proportion as these difficulties are removed, so will the general system recover its tone, and the disease gradually disappear.

2288. The courses may be repeated once or twice a week, according to the urgency of the symptoms, and cayenne, bayberry, restoratives, and enemas, used freely in the intervals. Lobelia pills, the alterative mixture, or the tea for impurities of the blood, (1518) may be employed with more or less advantage. Cleanliness, pure air, exercise, and clothing adapted to the season and climate, are each important. The skin should be rubbed briskly every night and morning with a coarse towel, or flesh brush. The meals should be taken at regular hours, and nothing eaten that will derange, or oppress the stomach. (1680, *et seq.*) Butter, fat meat, tea, coffee, gravies, minced pies, and all mixtures of a similar kind, are more or less injurious. The unbolted wheat bread, rice, hominy, mush and milk, tapioca, sago, ripe fruits, soft boiled eggs, and the lean part of a tender beef steak, provided the patient has been accustomed to animal food, may be used with benefit.

2289. The hand bath (1455) is an invigorating agent, where there is no objection to its employment.

2290. The scrofulous tumors, if not too far advanced, may often be dispersed by applications of the Indian meal poultice, or a plaster composed of meadow fern ointment, cayenne, and lobelia, as directed for the incipient stage of cancer. (1831.) The tumors may sometimes be removed, also, by keeping them constantly wet with rheumatic drops, as mentioned in the treatment for boils. (1808.) If suppuration has commenced, however, they must be poulticed until the matter is discharged, when an application may be made of the healing salve. If the joints are affected, and have proceeded to suppuration, they must be treated in a similar manner.

2291. Sometimes a scrofulous ulcer leaves a considerable

cavity, particularly in the breasts of females, and in that case it should be syringed gently with an infusion of sumach, witch hazel, or raspberry leaves, rendered slightly pungent with rheumatic drops, if the sore is not too irritable; and when the cavity is sufficiently cleansed, its surfaces should be brought into contact by a compress and bandage, so that they may form the necessary union. Without this precaution, it is sometimes impossible to cure an ulcer, however active or judicious the treatment may be in other respects.

SCURVY.

2292. Scurvy originates in a highly disordered state of the general system, and has a tendency to putrefaction. The blood is dark and liquid, the countenance sallow and bloated, the pulse feeble, the skin dry and inactive, the breath offensive, and the respiration hurried by the slightest motion. The teeth are loose, and the gums spongy, and disposed to bleed. Wounds that have been healed, break out afresh; the feet and legs swell; and livid or purple spots appear on different parts of the body, usually commencing on the lower extremities, and proceeding upward to the abdomen, and arms. The disorder comes on with lassitude, debility, dejection of spirits, an unwillingness to move about, and a feeling of stiffness in the knees and feet. In the latter stages, hemorrhage takes place from the nose, mouth, bladder, and rectum. The stools are very offensive. Great emaciation ensues, accompanied by stiff and swollen joints, and wandering pains in different parts of the body. In some cases, indolent ulcers form on the thighs and legs.

2293. The disease appears in its most aggravated form among seamen during long voyages, and is usually attributed to the use of salt provisions, but whatever influence these may have, it no doubt originates in a depraved condition of the digestive organs, brought on by fatiguing labor, alcoholic drinks, impure water, want of cleanliness, exposure to damp and unwholesome air, or whatever has a tendency to weaken or disorder the general system. The *land scurvy*, as it is termed, is milder in its symptoms, excepting when it breaks out in camps and garrisons.

2294. Treatment. Courses of medicine are necessary to strengthen the digestive organs, increase the activity of the skin, free the blood from impurities, and invigorate the general system. They may be administered once or twice a week, according to the necessity of the case. Injections must be used several

times a day, until the stools cease to be offensive. Tonics, and a free use of cayenne and bayberry, are indispensable. The diet and intermediate treatment, may be the same as in scrofula. (2288.) If meat is eaten, it should consist of a lean and tender beefsteak, or piece of roasted lamb, without any gravy. The *fashionable* remedies prescribed by the diplomatised physicians, such as lemon juice, garlic, horseradish, and scurvy grass, and regarded by them as *specifics*, possess but little value, excepting perhaps to amuse the patient in the absence of some more efficient remedy.

2295. If the joints are stiff, they should be rubbed frequently with pepper sauce, or vinegar and cayenne, (1531) and wrapped in flannels to keep them warm. The local application of steam, also, is particularly beneficial. (1499.) In the event of *ulcers*, they must be treated as will be directed hereafter, under that head. If the gums are spongy, the mouth should be frequently washed with cayenne and bayberry tea, or rheumatic drops diluted with water.

SHINGLES.

2296. This disease commences with a number of vividly red patches, a short distance from each other, which pass round the waist in the form of a girdle, without, however, entirely encircling the body. Sometimes they take a direction over the shoulder, or down to the groin. They are preceded by an itching and burning sensation, and sometimes sickness and headach. The patches or clusters are one or two inches in diameter, and soon become covered with a number of small blisters, which burst in four or five days, and discharge a thick, glutinous matter, which forms into crusts or scales of a brownish color. The blisters dry up in some cases without the formation of scales, and in others they are followed by tedious ulcers.

2297. This affection mostly occurs in persons between twelve and twenty five years of age. It is caused by intemperance in eating, the use of spirituous liquors, and sudden changes from heat to cold.

2298. Treatment. If the health is much impaired, or the stomach in a disordered state, an emetic should be administered, or if adviseable, a course of medicine. This should be followed by the use of spiced bitters, or some other tonic, and an occasional dose of composition, or cayenne and bayberry. If the bowels are confined, an injection should be administered once a day until they become regular. The diet, as in all cutaneous dis-

cases, must be regulated, avoiding the use of butter, and every oily or greasy substance. (1680, *et seq.*) The external applications may be the same as directed for *ringworm*, to which the reader is referred. I am told that equal parts of the tincture of bayberry and rheumatic drops make an excellent wash, but cannot speak of its virtues from experience. The blood root steeped in vinegar is also an approved remedy. If *ulcers* should form, they must be managed as directed under that head.

SMALLPOX.

2299. Smallpox prevails at all seasons of the year, and attacks persons of every age and sex. It does not often occur more than once in the same individual. Many people appear to be exempt from the disease, notwithstanding their exposure to it in its worst forms, while others, who think they have used every precaution to guard against its contagious influence, contract it without any apparent cause. The American editor of Good's Study of Medicine, says, "In that loathsome receptacle, the well remembered Jersey prison ship, which was specially appropriated for the confinement of American prisoners, more than one hundred and twenty men were imprisoned, who had never been affected with smallpox either naturally or by inoculation, and yet of that number, less than two thirds were attacked with the disease, which, however, proved extremely fatal. One would naturally expect, that in such a place the specific virus of smallpox would act with much more violence. This fact was communicated to Dr. Francis by the late Philip Freneau, of New Jersey, one of the prisoners."*

2300. It has been suggested that those who live in strict obedience to the laws of health, are exempt from the disease; and a case in illustration has been cited by Dr. Alcott, in his Library of Health. "A sea captain in Virginia," he says, "desirous of having the smallpox by inoculation, made application to a physician for the purpose. On being repeatedly inoculated, without success, and on being questioned by the physician in regard to his habits, it was found that he had, for some months or years, abstained from all fermented and alcoholic liquors, and from the use of animal food. By the advice of the physician, he resumed the use of flesh and wine, and after some time, was inoculated again, and had the small pox in the usual manner."†

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* Good's Study of Medicine, 6th American edition, vol. i. pp. 624–5.

† Health Library, vol. iv. No. 1.

2301. *Symptoms.* Smallpox commences with a cold stage, which is soon succeeded by fever, accompanied by pains in the head, back, and region of the stomach; soreness of the throat; great thirst; vomiting; inactive state of the bowels; cold hands and feet; drowsiness; and in adults a tendency to perspiration. The fever is usually the most intense just before the eruption makes its appearance; and in children, the latter is sometimes preceded by convulsions. The tongue, at first, is covered with a white coat, but gradually assumes a bright red color. The eruption usually makes its appearance the third or fourth day, and is first seen on the face, neck, and breast, from which it passes down, in the course of twenty four hours, to the lower extremities. The fever then abates, and leaves the patient comparatively free from distress. The eruption consists of small, red spots, which, on the first and second days, says Dr. Hall, are hard, globular, painful, and distinct from each other, with the intervening spaces nearly colorless. They enlarge gradually, and on the third, fourth, and fifth days, contain a little yellowish fluid, the intervening spaces becoming red. On the sixth and seventh days, they are distinguished by a central indentation. On the ninth and tenth days the indentation ceases to be observed, and the *pustules*, as they are termed, present a full and rounded appearance. On the eleventh, twelfth, and thirteenth days, they begin to dry up, and are followed by hardened crusts or scabs, which fall off at length, leaving the skin of a brown, or red color. "In those cases where the pustules are large, and are late in becoming dry and falling off, they are very apt to leave pits behind them; but where they are small, suppurate quickly, and are few in number, they neither leave any marks behind them, nor do they occasion much affection of the system."

2302. About the eighth day from the commencement of the disease, the face usually begins to swell, and if the pustules are numerous, the swelling increases to such an extent as to close the eyelids. At the same time there is an increased flow of saliva, accompanied, in some instances, with hoarseness, difficulty of swallowing, and deafness. On the tenth or eleventh day, the swelling of the face subsides, together with the flow of saliva, and affection of the throat, and the feet and hands become tumid and puffy.

2303. Smallpox is divided into two kinds, the *distinct* and *confluent*. In the first the eruptions are separate from each other, and in the second they run together, forming large or continuous patches, particularly on the face. The confluent smallpox is the most aggravated form of the disease. The eruption is not unfrequently preceded by a copious diarrhœa; and the tongue is cov-

ered with a dark, or black coat. The saliva is so viscid as to be discharged from the mouth with difficulty. The fever, unless subdued by appropriate remedies, continues violent throughout the malady, accompanied sometimes with delirium, stupor, or convulsions. The matter contained in the pustules is of a dark color, and oftentimes so acrid as to excoriate the parts with which it comes in contact. "Sometimes it happens that a putrescency of the fluids takes place at an early period of the disease, and shows itself in livid spots interspersed among the pustules, and by a discharge of blood by urine, stool, and from various parts of the body."

2304. *Inoculation, and Vaccination.* Inoculation was practised extensively before the time of Dr. Jenner, who introduced vaccination, and was performed by puncturing the skin with some convenient instrument, and inserting the matter of a smallpox pustule, so that it might be absorbed, and carried into the system. The poison taking effect, the smallpox was produced with all its characteristic symptoms, but in a *milder* form, as it was said, and this was regarded for a time as preferable to the old plan of taking it by chance. It was soon discovered, however, that inoculation was productive of greater evil than good, because, by inducing the smallpox in this artificial manner, it was communicated to others who would not consent to be inoculated, and consequently the mortality was increased rather than diminished.

2305. In 1798, Dr. Jenner came before the English public with his discovery of *vaccination*, which consisted of the introduction of matter into the system, which he obtained from eruptions on the teats and udders of cows, and the disease it produced was called *kine* or *cow pox*. This was said to prevent, or modify the smallpox, without any of the objections which had been urged against inoculation; and Dr. Jenner received twenty thousand pounds from the English government for his discovery. Vaccination, however, notwithstanding all that was said in its favor, was regarded by many people with abhorrence, and among these, was the ingenious and well known Mr. Cobbett, who, in giving his views upon the subject, said—"There are some things, surely, more hideous than death, and more resolutely to be avoided; at any rate, more to be avoided than the mere *risk* of suffering death."* He also observes, "that in hundreds of instances, persons vaccinated by Jenner himself, have taken the smallpox afterwards, and have either died from the disorder, or narrowly escaped with their lives." He further states, that the

* Cobbett's Advice to Young Men.

smallpox broke out in the town of Ringwood, England, in its worst form, and carried off more than a hundred persons, young and old, every one of whom had been vaccinated. "I may here add," continues Mr. Cobbett, "that I was vaccinated myself in 1800 by Dr. Mead of Alstead, N. H., and that too in both arms, but in six months after, I was seized with the smallpox, notwithstanding the care-taking pains of the doctor to poison the disease out of me."

2306. From England, vaccination was introduced into the United States, where it has been made subservient to the pecuniary interests of the medical profession, regardless altogether of the health and lives of the people. In the city of Boston, the diplomatised physicians receive from one to five dollars for every person they vaccinate, according to his or her ability to pay; and to add to their emoluments, they have procured the passage of a law which imposes upon parents the necessity of having their children vaccinated, before they can send them to school. Nor are they satisfied with vaccinating each individual once, but have announced that after a certain number of years, it is necessary to be re-vaccinated, or there is still danger of contracting the disease. All this, to me, appears more like a scheme to obtain the people's money, than to confer upon them any real, or even supposed advantage. I am not alone in this opinion, for it was openly and fearlessly proclaimed a year or two ago in the Massachusetts House of Representatives, by Col. Thayer of Braintree, a member of that body. A bill was before the House in relation to the removal of smallpox patients from Boston to a neighboring island, in order to prevent, as it was supposed, the spread of the disease, and Col. Thayer, in the course of an animated speech on the subject, remarked, "It has been said by the worthy doctor on my right, that there is an epidemic in the air. But there is always an epidemic somewhere, and I believe it is in the pockets of *certain gentlemen*, who say there is no danger—no excitement—and that we must vaccinate and re-vaccinate. Why do physicians, generally—not all of them, I confess—wish to enforce vaccination, and oppose the other means intended to prevent the spread of the smallpox? Do they lose money by it? Do they vaccinate any one gratuitously of whom they can obtain their pay? No, sir; I am told that they receive one, two, three, or five dollars, for each person they vaccinate. I was told by a very respectable physician in this city, that one doctor has received *ten thousand dollars* for vaccinating and attending on smallpox patients. It is no wonder, then, that they recommend vaccination, and re-vaccination—it is no wonder that they endeavor to keep up the excitement in the public mind. What has been the practice of some of the doctors in this city?

Have they not done all in their power to spread the disease? Have they not inoculated with the smallpox matter? and did not one of them inoculate a whole family of young children with the smallpox, at the north part of the city?"

2307. Mr. M——, another member of the Massachusetts Legislature, and a gentleman in whom I can repose every confidence, informed me that in 1800 he resided in Marblehead, a small seaport town within fifteen or twenty miles of Boston, and during that period, a physician in the place introduced the smallpox among the inhabitants for the purpose of increasing his practice.

2308. Medical writers, with all their prepossessions in favor of vaccination, do not apppear to place much confidence in it as a preventive of the smallpox. Dr. Eberle says, "From whatever cause it may proceed, it is beyond a doubt, that the failures of vaccination in preventing secondary smallpox, have been steadily and progressively on the increase for some years past." He further remarks, "Dr. Gregory has given a table of the total number of admissions into a smallpox hospital in ten different years, and from this statement it appears that in the year 1810, the proportion of cases of smallpox after vaccination, to the whole number of admissions, was as 1 to 30; while in 1815, it was as 1 to 17; in 1819, as 1 to 6; in 1821, as 1 to 4; and during the year 1823, as 1 to 3 1-2."*

2309. During the prevalence of the smallpox in Boston, in the winter of 1839, the Boston Medical Association appointed a committee to enquire into the character and extent of the smallpox and varioloid, then existing in the city, and the committee reported, that in the execution of their commission, they addressed a circular letter to every practitioner of medicine known to them in Boston, inclusive of South and East Boston, presenting to them certain enquiries in a printed tabular form, to which enquiries immediate answers were solicited. These enquiries related to the name and residence of all patients affected with the disease, who had come under the care of each physician respectively, together with their age, occupation, the question of previous smallpox or vaccination in the individual, and the character and event of the disease. To obtain answers to these enquiries, personal application was made, when necessary, so that a return was probably obtained from every medical practitioner in the city. From these returns it appears that the disease had been seen and attended by somewhat less than half of the physicians then practising in the city, the majority having met with no cases in their practice. The committee then proceeded to analyze the returns,

* Eberle's Practice of Medicine, 4th edition.

and found that the whole number of cases known to the physicians of Boston up to the 9th of December, was two hundred and forty eight. Of these, 115 were males, and 121 females. Of the remaining 12 the sex was not stated.

2310. The ages were as follows. Under two years, 10; between two and ten years, 44; between ten and twenty years, 49; between twenty and forty years, 101; over forty years, 34; unknown, 10.

2311. The *occupations* and *condition* are stated as follows. Laborers, 27; mechanics, 32; merchants, traders, and those devoted to professions, 22; domestics, 28; others, including children, 114; unknown, 25.

2312. The *causes* to which the patients attributed their disease, were, direct connection with the sick, 127; supposed conveyance of contagion by another, 1; unknown, 120. It would seem, from this part of the report, that persons may be attacked with smallpox, without being exposed to the disease.

2313. With regard to the protective power of *smallpox* and *vaccination*, which is the most interesting part of the report, it is stated that 13 had been previously attacked with the smallpox; 149 had been vaccinated once; 18 had been vaccinated twice; and 55 had neither had the smallpox, nor been vaccinated. Now it would seem that vaccination, instead of exercising any protective influence, predisposes an individual to the smallpox, for out of two hundred and forty eight cases of the disease included in the above report, the astounding fact must be kept in view, that more than TWO THIRDS OF THEM HAD BEEN VACCINATED ONCE, AND NINETEEN OF THEM MORE THAN ONCE! We have conclusive evidence, therefore, that vaccination is no protection whatever against smallpox, while in addition to the expense and loss of time attending the process, it is liable to be followed by obstinate diseases, such as boils, cancers, and affections of the skin. Cases of this kind are exceedingly numerous, and should excite the alarm of every friend to the human family. Dr. Eberle, in his Practice of Medicine, very honestly remarks, "I have several times known obstinate and alarming cutaneous affections communicated to children, by vaccinating with matter taken from unhealthy subjects." He also adds, "It is a common belief among persons out of the profession, that the vaccine disease is apt to give rise to disagreeable eruptive affections, and such occurrences are in fact not very unfrequent."

2314. A young woman by the name of Blatchford, mentioned in a preceding part of this work, (288, *et seq.*) was under treatment at the Massachusetts General Hospital a long time for a severe cutaneous disease, which was said by herself and friends to

have been produced by vaccination, and after having been made the victim in that institution to a series of the most revolting experiments, was dismissed in a worse condition than when she came. The vaccination was performed by an eminent physician of Boston, who, of course, observed the usual precautions with regard to the vaccine matter, and yet he inflicted a dreadful and perhaps incurable malady upon his patient. Such facts cannot fail to excite the deepest regret and sympathy in every exalted and benevolent mind, even though the medical faculty should pass them by as unworthy of notice or attention.

2315. "We are informed," says Dr. Alcott, "that syphilis has been communicated by vaccination; and that several cases of this sort occurred quite recently in a family near Boston. The story is almost incredible, and yet we received it from a source on which we are accustomed to rely."*

2316. A Mr. Benson of Boston, was attacked about two years ago with boils, which, he informed me, made their appearance soon after he was vaccinated, and they continued to follow each other in such rapid succession, that his life became a burthen. He was cured in four or five weeks, however, by the reformed practice, and since that time has enjoyed excellent health.

2317. Joseph A. Whitmarsh of Boston, told me that he was vaccinated by a physician in Providence, R. I., several years ago, and that it was followed by a painful and troublesome ulcer, which continued the whole of one winter.

2318. A child of Mr. and Mrs. Robbins, residing in Middlesex street, Boston, was vaccinated in the right arm, in December, 1839, by a diplomatised physician, but the *vaccine poison* not taking effect, the operation was performed a second time, which proved effectual. The original puncture, however, now became inflamed, and the inflammation extended to the elbow, where a large and painful ulcer formed, succeeded in a short time by ulcers over the whole of its body. Dr. Perry, a physician of the old school, was called in, who stated that the disease was not the effect of vaccination, but was owing to a scrofulous humor. The mother, however, asserted that the child had been perfectly healthy until the period of vaccination, and had never manifested the slightest symptom of a scrofulous disposition. I called to see the child, in company with Dr. Osgood, and found the ulcers lining its mouth, and extending down its throat. Appropriate remedies were ordered, which were followed by a sensible improvement in the child; but Dr. Perry called in accidentally, and assured the parents that it must inevitably die. Disheartened at this intelli-

* Library of Health, February, 1840.

gence, they discontinued the treatment, and as was to be expected, it soon expired.

2319. One fact worthy of being noted, in relation to the above case, is, that after the child was vaccinated the second time, and before the arm became inflamed, as has been described, the physician who performed the operation, filled about forty quills with the matter of the pustule, which were intended for the vaccination of other persons, and thus the disease with which the little sufferer was afflicted, was no doubt extensively propagated.

2320. A child of Mr. and Mrs. Hildreth, residing at 7, Suffolk street, Boston, was vaccinated about two years ago by Dr. Storer of that city, a gentleman of some distinction as a physician of the old school, and when the vaccine virus took effect, the child broke out with ulcers, similar to the one already mentioned, and after lingering for a period of four months, death put an end to its sufferings.

2321. I might fill a volume with cases of this description, but the above will suffice to show the danger of vaccination; and I must be permitted to express the fervent hope, that the people will ultimately open their eyes to the enormity of the practice.

2322. There is still another objection to vaccination, which is, that the smallpox is not a fatal or even dangerous disease when properly treated, although in the hands of the diplomatised physicians, it is truly a scourge of the human race. There is no disease which yields more readily to the medicines employed in the reformed practice, than this; but on the other hand, if patients are bled, blistered, and dosed with poison, it must be expected that many of them will perish, for the treatment itself is sufficient, in many instances, to destroy life, independent of any co-operation of the original disorder.

2323. Vaccination, I may add, is often followed by a disease which physicians have been pleased to term *varioloid*, but which, says Dr. Eberle, is "a modified form of smallpox;" and he observes that this malady is becoming "more and more common," having "appeared in various countries within the last fifteen years in frequent and extensive epidemics." No longer ago than February last, according to the New York Evening Post, it prevailed extensively in that city. "Persons are attacked by it," remarked the editor, "without having to their knowledge, been exposed to the contagion. We have heard of several cases in which it has been fatal, and the remark has been made, with what truth we cannot say, that it appears to be more virulent than usual." Now if varioloid is nothing but smallpox, why do not physicians honestly call it by that name? The answer is obvious, that inasmuch as varioloid prevails epidemically, and is often very fatal, it must

be designated by some other title, or the people would perceive at once, that vaccination neither has any tendency to prevent smallpox, nor to modify its effects; and they would cease to encourage the imposition which has been practised upon them to such an alarming extent.

2324. TREATMENT. By giving medicine to promote a gentle perspiration, no difficulty will be experienced in the treatment of smallpox. Severe cases are often cured by the use of composition, or cayenne and bayberry, giving a dose every one, two, or three hours, as long as the symptoms render it necessary. Pennyroyal, or catnip tea, is also an excellent medicine, and may be employed freely as a drink. It is important that the bowels should be regularly evacuated, and if there is any tendency to costiveness, an injection may be administered every night and morning. Benefit will be derived from taking a dose of composition at bed-time, and placing a bottle of hot water wrapped in a damp cloth at the feet. I would recommend the patient to abstain from animal food, and subsist principally upon a nourishing vegetable diet, such as hominy, wheat jelly, and preparations of sago, rice, tapioca, and the unbolted wheat meal. My objection to animal food, is, that it tends to render the blood impure, (1683) and in this disease we must be particular to guard against putrescency of the fluids.

2325. If any unfavorable symptom should arise, such as flattening of the pustules, tendency of the eruption to recede, intense fever, copious diarrhœa, black tongue, delirium, stupor, or great prostration of the vital powers, we must administer a thorough course of medicine, and repeat it at proper intervals as long as there is any apprehension of danger. Between the courses, appropriate remedies are to be employed to preserve the moisture of the skin, (1660) for unless we keep a constant determination to the surface of the body, the whole force of the disease will be expended upon the internal organs, and produce an alarming, or perhaps fatal train of symptoms.

2326. Where the patient is restless or nervous, a portion of scullcap, or lady's slipper, may be added to the other medicines, or the nervine tea may be employed. (1514.)

2327. If convulsions ensue, the same treatment may be adopted which is recommended under that head. (1888, *et seq.*)

2328. The patient should be sponged during the administration of each vapor bath with a solution of sal æratus, or bicarbonate of soda, giving preference to the latter, if it can be obtained. (1029.) This cleanses the skin, and has a highly salutary effect. The solution may be warm or cold, as may be most agreeable.

After it has been applied, the surface may be washed with pure water, or a tea of raspberry, witch hazel, or sumach leaves.

2329. The temperature of the sick chamber is to be regulated according to the season. A cold atmosphere, which is frequently recommended by physicians, is as injurious as an undue degree of warmth. Extremes are to be avoided. The patient should neither be loaded with clothes, as was the practice fifty or sixty years ago, nor denied a sufficient quantity to render him comfortably warm, and keep the skin moist. A peculiar and unpleasant odor rises from the body during the latter stages of the disease, and hence the utmost degree of cleanliness should be observed, and the apartment ventilated several times a day, without exposing the patient to draughts of air. (1634.) Ventilation, let it be borne in mind, is of paramount importance.

2330. Medical writers recommend that the face should not be heated by exposure to the fire, and the precaution is worthy of attention.

2331. One particular advantage attending the reformed vegetable practice in smallpox, is, that the face is rarely or never pitted.

SORE OR INFLAMED EYES.

2332. This complaint commences with soreness, heat, redness, and a copious flow of tears. There is also a sensation resembling that of sand in the eye. The pain is sometimes intense, darting, as it were, into the brain, and extending, in some instances, to the teeth, lower jaw, and ear. The light cannot be borne. The eyelids swell, and become glued together by the discharge of matter. Constitutional symptoms frequently arise, as chills, flushes of heat, headach, and fever. The discharge is sometimes so acrid as to inflame the adjacent parts.

2333. TREATMENT. Sore eyes are often regarded as a local disease, when in fact they are dependent upon a disordered state of the stomach; and external applications are made for months in succession, without benefit, where an emetic or course of medicine would in all probability effect a speedy and radical cure.

2334. The eyes may be washed several times a day with either of the preparations recommended under the head of eye waters. (1532, *et seq.*) In the meantime the bowels should be regulated by injections, and the usual tonics and stimulants employed to invigorate the digestive organs, and keep up a healthy action in the system. If there is a discharge of matter from the

eyes, they should be kept perfectly clean by washing them frequently with warm water and milk, or a tea of raspberry, or witch hazel leaves; and if the lids are sealed together, they should be slowly and cautiously opened, so as not to injure the parts. If there is a collection of matter under the lids, it should be carefully washed away. A poultice of slippery elm, containing a small portion of ginger, and covered with a piece of gauze, may be applied with advantage; and if the eye becomes very hot, the poultice may be wetted occasionally with moderately cold water.

2335. Sore eyes are sometimes caused by the irritation of *wild hairs*, as they are termed, which should be immediately plucked out with some convenient instrument.

SPRAINS.

2336. These are the result of accidents, and mostly occur in the ancles, and wrists. They are followed by pain, heat, redness, swelling, and sometimes discoloration of the skin. If the ligaments which bind the joints together are seriously injured, the case may linger for several weeks before a cure is effected, unless the patient consents to keep the joint at rest. External applications are to be made, as recommended for bruises; (1811) and if the health is impaired, it must be reinstated by attention to diet, and the use of appropriate medicines.

ST. VITUS'S DANCE.

2337. In St. Vitus's dance, the voluntary muscles (26) are thrown into irregular action, producing convulsive movements in various parts of the body. The disease is usually preceded by prominent derangement of the stomach, bowels, and nervous system. Females are more subject to it than males. It usually makes its attack between the ages of eight and fifteen, though it may occur at an earlier or later period. It mostly commences with an occasional twitching of the fingers, and muscles of the face, and after a time, other parts of the body become affected, especially the lower extremities, producing awkwardness in walking, and a jerking and unsteady gait. The hands are frequently unmanageable, so that the patient finds great difficulty in conveying food to the mouth. The face is often hideously distorted. In severe cases, the swallowing and respiration are rendered difficult, and the voice is more or less impaired. The twitches subside during sleep. The disease may disappear in a

few weeks, or it may be protracted for many years. It is increased in violence by exposure to cold, and by strong mental emotions. It is caused by fright, intemperance in eating and drinking, suppression of the catamenial discharges, and the use of mineral and vegetable poisons.

2338. TREATMENT. If the complaint has been of long continuance, a few courses of medicine should be given, administering spiced bitters and composition several times a day, in the intervals. If the bowels are torpid, an injection once a day will be indispensable. Nervines are useful in this complaint, and particularly the scullcap, the infusion of which may be taken freely as a drink. The lobelia pills, or alterative mixture, may be advantageously employed as a part of the intermediate treatment. The patient should subsist upon a plain, simple diet, eating temperately, and avoiding the use of tea, coffee, butter, and all oily or greasy substances. The unbolted wheat bread will be found very wholesome.

2339. If the bowels are obstinately costive, a decoction of boneset may be employed with advantage; (713) or half a teaspoonful of cayenne mixed with molasses may be taken three times a day.

2340. I have found the following preparation to answer a very good purpose. Take equal parts of scullcap and composition, and steep a large table-spoonful of the powder in a pint of boiling water. Keep the tea warm by the fire, and take a teacupful at a dose, repeating it three or four times a day, and avoiding exposure to a damp or chilly atmosphere. The value of the remedy may be increased by adding ten, fifteen, or twenty drops of the tincture of lobelia to each tea-cupful of the tea. In addition to this treatment, the skin should be rubbed briskly every night and morning with a coarse towel, or flesh brush.

SUPPRESSION, AND RETENTION OF URINE.

2341. In *suppression of urine*, the kidneys, either from inflammation, weakness, or some mechanical obstruction, lose their secreting power, so that there is little or no urine conveyed to the bladder. Among the symptoms which characterize the malady, are restlessness, headach, thirst, nausea, vomiting, fever, pains in the back, and lower part of the abdomen, and a constant desire to pass water. If any urine is discharged, it is accompanied by a violent burning or scalding sensation. The perspiration sometimes ac-

quires a urinous smell. The kidneys failing to perform their accustomed office, the urine is retained in the circulation, and unless discharged through the pores, it causes drowsiness, stupor, and sometimes delirium, or convulsions.

2342. The disease is produced by the use of mercury, and cantharides, and by the irritation of gravel in the kidneys. In females it is sometimes caused by exposure to cold during the catamenial discharge.

2343. *Retention of urine* is owing to weakness or paralysis of the bladder, whereby it loses its expulsive power; or to an obstruction in the urethra, or neck of the bladder, arising from inflammation. The disease is more frequent in advanced than early life. The bladder is sometimes so much distended as to enlarge the abdomen, causing an appearance of dropsy. There is a frequent desire to pass water, accompanied with the most excruciating pains, and the lower part of the abdomen in the region of the bladder is tender on pressure. The skin is usually hot and dry, and the patient complains of nausea and headach.

2344. The disease is caused by venereal excesses, gravel, the use of acrid poisons, the introduction of surgical instruments into the urethra, and injuries inflicted by improper treatment during childbirth. A wound of the spine is sometimes followed by paralysis of the bladder, and under these circumstances, little or no pain is experienced in the latter organ until it is considerably distended with urine. If relief is not afforded, the bladder finally bursts, and its contents escape into the abdomen, which is a fatal accident.

2345. In connexion with these diseases, I may mention *strangury*, which consists of a difficulty and pain in passing water, without implying an obstinate *retention*. The urine is sometimes voided in drops, and at others in a small, or perhaps divided stream. Children whose health is neglected during teething, are subject to the complaint. It is frequently produced by the external application of blisters.

2346. Treatment. If suppression of urine is owing to *inflammation of the kidneys*, the patient should be treated as directed under that head, (2115) making free use of enemas, diuretics, and mucilaginous drinks. If the patient is restless or nervous, the scullcap, or lady's slipper may be added to the other medicines. If drowsiness, or stupor should occur, or if the perspiration acquires a urinous smell, we must resort to active treatment, administering full and thorough courses of medicine, for unless we keep a constant determination to the surface of the body, it may be impossible to save the life of the patient. Stim-

ulating injections every half hour or hour, are particularly beneficial, adding a small portion of lobelia to each, but not enough to excite unpleasant nausea.

2347. In *retention of urine* also, courses of medicine are indispensable, provided the case is obstinate, and I have never yet heard of an instance in which they did not afford entire relief. The vapor bath, cayenne tea, and frequent stimulating injections are particularly serviceable. Local applications should be made to the region of the bladder, as directed in paragraph 2095. Heated stones wrapped in damp cloths should be placed at the feet and sides of the patient, in bed, so as to keep up a free perspiration, or the cure will be protracted, and his sufferings rendered much more intense.

2348. Dr. Watkins of New Hampshire, informed me that a laboring man applied at his infirmary, about two years ago, who had not passed any urine for thirty six hours, and of course his agonies can be better imagined than described. A tea of cayenne, bayberry, and lady's slipper, containing a small portion of lobelia, was administered in frequent doses, together with two or three strong injections. The patient experienced no relief, however, for the pain was so urgent that he could not be kept in bed, nor was it possible, under these circumstances, to administer the vapor bath. The perspiration was so profuse as to leave the print of the footsteps on the floor. After the lapse of about three hours, during which time the patient suffered the greatest imaginable torments, he was told that unless he consented to remain in bed, death would be inevitable; and his fears becoming excited, he concluded to obey the injunction of his medical attendant. Accordingly, he returned to bed, and heated stones wrapped in damp cloths were placed about him, and a large tea-cupful of the above tea administered. In less than ten minutes the pain ceased, accompanied by a copious discharge of urine. The patient now experienced a slight degree of nausea, from the effects of the lobelia, and after slight vomiting, slept soundly for several hours. The next day a course of medicine was given, which restored the individual to his usual health.

2349. In *strangury*, relief may generally be obtained by the use of diuretic and mucilaginous drinks. The diuretic tea, (1516) with the addition of slippery elm, may be employed with great advantage.

2350. *Suppression of urine* is frequently mistaken by medical men for *retention*, and they attempt a surgical operation, which often proves fatal to the patient. Dr. Warren of Harvard University remarked, in a lecture, that a gentleman residing in South Boston, was attacked, many years ago, with suppression of urine,

and was attended by a physician, who, after administering the usual remedies, plunged a trocar through the rectum into the bladder, but no urine followed the withdrawal of the instrument. The operation was repeated a second, and even a third time, but without any other effect than that of producing a copious discharge of blood. The patient died, and it was found upon a post mortem examination, that the bladder did not contain a drop of urine. There was violent inflammation of the kidneys, however, which prevented the secretion of urine.

SUSPENDED ANIMATION.

2351. This may arise from various causes, such as hanging, drowning, falling from a height, a severe blow, long exposure to cold, a stroke of lightning, or inhaling noxious gases.

2352. In drowning, all signs of life disappear in a few minutes, and the face assumes a livid and swollen appearance. The eyes are staring and glassy, and the limbs more or less stiffened. A considerable portion of water makes its way into the stomach, but by a contraction of the windpipe, it is excluded from the lungs, until life entirely ceases. In a few instances, persons have been restored to life after having been immersed in the water for half an hour, so that we should always be on the side of humanity, and make every possible effort at resuscitation, even though we have but slight hopes of success.

2353. Persons are often destroyed by *carbonic acid gas*, which abounds in wells, cellars, and caverns, and which also accumulates in a large quantity by burning charcoal in a tight room. In the concentrated form, it destroys life almost instantly, but if mixed with atmospheric air, it produces giddiness, faintness, insensibility, and eventually death. The face is swollen, the lips blue, and the veins of the neck and head distended with blood. Persons who are about to descend into a well, where they have reason to suspect the presence of this destructive gas, should use the precaution to let down a lighted candle, and if it is extinguished, they may be assured that their descent will be followed by immediate death.

2354. When an individual is struck by lightning, small blotches are often observed on different parts of the body, and sometimes red streaks are seen on the breast and arms. If life still continues, the breathing is slow and difficult, and the face generally red and swollen.

2355. In long exposure to cold, the skin becomes pale, rough

and shrivelled, followed by drowsiness, benumbed limbs, and an urgent desire to sleep.

2356. TREATMENT. One, two, or three tea-spoonfuls of the antispasmodic tincture (1266) should be poured down the throat, and the dose repeated, if necessary, in five minutes. In the meantime, stimulating enemas will be found of great advantage, for the impression which they make on the bowels may be transmitted through the nerves to the heart, and thereby rouse this organ into action, or in other words, renew its contraction. Furthermore, it must be borne in mind, that the pressure of the atmosphere upon the surface of the body interferes with the return of the blood to the skin, (1488) and to obviate this difficulty, the air immediately around the patient should be lightened or rarified by the application of vapor. For this purpose, he may be covered with a blanket, and heated stones wrapped in damp cloths placed about his person, and particularly at his feet. The artificial warmth must be introduced very gradually, however, or the patient may be destroyed even after signs of life have been manifested. To use the beautiful language of Armstrong, in his work on Health,

> "While the vital fire
> Burns feebly, heap not the green fuel on;
> But prudently foment the wandering spark,
> With what the soonest feels the kindred touch;
> Be frugal even of that; a little give
> At first; that kindled, add a little more,
> Till, by deliberate nourishing, the flame
> Revived, with all its wonted vigor glows."

2357. The antispasmodic tincture may be given in tea-spoonful doses, as the case may seem to require; or if that cannot be obtained, a strong tea of cayenne, bayberry, and rheumatic drops, containing a portion of green, or brown lobelia, may be employed. The surface of the body should be rubbed briskly with the tincture of cayenne, or some other stimulating wash. If convenient, vapor may be generated by means of a boiler, (1501-2) and applied directly to the body as mentioned in paragraph 1496. If the room is cold, a fire should be immediately kindled with some light materials. The first symptoms of returning life will be manifested by a muscular motion of the lips, eyes, or extremities, and by degrees the skin will become soft and warm. Cayenne, or composition, may then be given internally, and the external heat also increased, but in the same gradual manner as already directed.

2358. After recovery, the patient should be kept in a moderate perspiration for ten or twelve hours, and if requisite, an emetic, or course of medicine administered.

2359. In case of drowning, the individual should be stripped of his wet clothes, wrapped in a blanket, and carried to some convenient place for the administration of the necessary remedies. His head should be kept in its natural position. The practice of shaking the patient, or rolling him upon the ground, is not productive of any good, and may result in serious injury.

2360. Where an individual has been benumbed by exposure to cold, external warmth should be introduced still more gradually than in the case of drowning, or suspended animation from any other cause. If the limbs are frosted, they should be wrapped in cloths, and wetted frequently with cold water, as directed in paragraph 1813.

SYPHILIS.*

2361. A person is said to have the syphilis, observes a medical writer, when the venereal poison has been received into, or is diffused through the system, and there produces its peculiar effects, such as ulcers in the mouth, tetters, ulcers of the skin, pains, swellings, and caries or mortification of the bones. As long as the effects of the poison are local and confined to or near the genital organs, the disorder is not called syphilis, but is distinguished by some particular name, according to its seat or appearance, such as gonorrhœa, chancre, or bubo.

2362. Syphilis, as well as gonorrhœa, the latter of which has been described under the appropriate head, is generally contracted by impure sexual intercourse, and is sometimes transmitted from parent to child. It is so contagious, in some instances, as to be communicated by the breath. This, however, is very rare. Cardinal Wolsey was indicted for whispering in the king's ear, while supposed to be affected with venereal.

2363. *Chancres* are sores of a peculiar character, which arise in a few days, or weeks after the venereal poison has been imbibed. They are properly termed *syphilitic ulcers*. In the male, they usually make their appearance on the head of the penis, or under the foreskin; but in the female, they are generally found on the external or internal labia, or within the vagina. They appear also on the thighs, and indeed, on every part of the body with which the venereal poison comes in contact. They are di-

* This disease is also called venereal, lues venerea, and pox.

vided by Dr. Marshall Hall into four kinds, the simple, the indurated, the phagadenic, and the gangrenous.

2364. The *simple syphilitic ulcer* usually begins about the head of the penis, "with a small red spot, followed by a yellowish-white point, gradually changing to a small, slightly excavated ulcer, having its bottom covered with a yellowish-white, very adherent substance."

2365. The *indurated ulcer* "is circular, excavated, without granulations, covered with a whitish adherent matter, and having a callous base, with hard, thick edges. When it appears on the body of the penis, it spreads to a considerable size, and retains its characteristic hardness, but without excavation."

2366. The *phagadenic* or *eating ulcer* "has an eroded aspect, is without granulations, and the soft parts which surround it are not callous nor indurated. It sometimes spreads with great rapidity, committing much havoc in the course of a few days; at other times it creeps slowly, but does not stop until it has destroyed a considerable portion of the head of the penis. It is sometimes attended with hemorrhage."

2367. The *gangrenous ulcer* "is the most terrific of all the primary syphilitic affections. It begins with a small blackish spot, attended with little pain, but which on examination is found to be a gangrenous eschar. This goes on increasing until a slough separates, leaving a highly corrosive sore, attended with acute pain, and soon covered with a new eschar. In this manner a succession of erosive processes and eschars go on, until a large part, and sometimes the whole of the genital organs, in both sexes, are destroyed."

2368. The matter discharged from these sores is capable of ulcerating the healthy skin, and hence the utmost cleanliness should be observed.

2369. *Buboes*, as they are termed, are an enlargement or swelling of the glands, very much resembling a boil, and have received their name from a Greek word signifying *groin*, in which they most frequently appear. They are found occasionally in the armpits, and in other glandular parts. They frequently suppurate, and break, discharging a large quantity of matter.

2370. The health of the patient becomes seriously affected in this complaint. He complains of headach, severe pains in the joints, sore throat, distressing cough, and disorder of the stomach, and bowels. He expectorates considerable quantities of thick phlegm. The skin breaks out with red pimples, and copper-colored spots or blotches also make their appearance, covered at first with whitish scales, and passing at length into offensive sores. As the disease advances, ulceration seizes upon the throat, and

extends to the neighboring parts, gradually eating away the palate and nose. The voice becomes hoarse, and is at last entirely destroyed. The bones in different parts of the body increase in size, presenting large tumors, and at length become rotten and exfoliate. It is a question with me, however, whether these dreadful symptoms, together with the formation of buboes, are not frequently produced by mercury, for it is well known that the medical faculty invariably administer that poison in syphilis, believing that nothing else will remove the disorder. The effect of mercury in rotting the bones, also, is equally well known to those who are acquainted with its nature.

2371. "When the disease is suffered to take its own course," says a writer on the subject, "and is not counteracted by proper remedies, the patient will, in the course of time, be afflicted with severe pains, particularly in the night time; his countenance will become sallow, and his hair fall off; he will lose his appetite, strength, and flesh; his rest will be much disturbed by night, and a slight hectic fever will arise. The ulcers in the mouth and throat being likewise suffered to spread, and to occasion a caries of the bones of the palate, an opening will be made from the mouth to the nose; and the cartilages and bones of the nose being at length eaten away, they will sink on a level with the face. Some constitutions will bear up a considerable time against the disease, while others again will soon sink under the general weakness and irritation which it produces."

2372. TREATMENT. The disease, in its early stages, where the symptoms are not urgent, may usually be cured by very simple treatment. The diet should be sparing, and chiefly vegetable; the skin rubbed every night and morning with a coarse towel, or flesh brush; and the bowels regulated, if necessary, with injections. If the appetite is impaired, the spiced bitters, or some other tonic, may be taken before each meal; and at night, on going to bed, benefit will be derived from a dose of composition, or cayenne and bayberry. For further directions, see paragraph 1706. If the disease does not readily yield to this treatment, a course or two of medicine should be administered.

2373. The *syphilitic ulcers* should be washed every night and morning with warm soapsuds, followed by a tea of witch hazel, bayberry, or any other of the astringents, and touched with a feather which has been dipped into rheumatic drops, or tincture of myrrh. The latter application should never be omitted, where the ulcers are gangrenous. A poultice of slippery elm, prepared with raspberry, or witch hazel tea, may now be applied, renewing it every twelve hours, or oftener if necessary, and adding a por-

tion of ginger to it, where the sore is not too irritable. After the ulcers assume a healthy appearance, the healing salve may be applied.

2374. If *buboes* arise, an attempt may be made to scatter them, according to the directions in paragraph 1808, or 1831, taking a dose of cayenne or composition several times a day, to keep up a healthy action in the system. If, however, they are very much inflamed, and there is every appearance of suppuration having commenced, they should be poulticed as directed for boils, (1806) so that the matter or pus may be discharged as speedily as possible.

2375. Both in buboes and syphilitic ulcers, the local application of vapor is found to be highly efficacious. (1499.)

2376. If severe constitutional symptoms arise, or if the system has been poisoned with mercury, a cure can only be effected by thorough courses of medicine, repeating them once or twice a week, according to the necessity of the case, and paying particular attention to the intermediate treatment. In this way the blood will be purified, and the system restored to a healthy condition. The alterative mixture may be used with advantage between the courses. If the throat is affected, it should be gargled frequently with some astringent tea, rendered slightly pungent with rheumatic drops.

TETTER.

2377. Tetter is an eruption of the skin, manifesting itself in patches of various sizes, and of a red color. It is accompanied with heat, and itching, and is followed by pimples or blisters similar to those in ringworm and shingles.

2378. *Dry tetter*, as it is termed, arises most commonly on the face, neck, arms, and wrists, disappearing after a certain time in the form of bran-like scales. The disease returns at uncertain periods. The eruption is not always in patches or clusters, but is sometimes continuous over a large extent of surface.

2379. The *moist* or *running tetter* is most frequent on the extremities. The blisters are larger than in the preceding species, and ultimately discharge a thick, glutinous matter, which dries into scabs or crusts. These fall off in a fortnight or more, and in some instances disclose ulcerated surfaces beneath.

2380. The attacks of this disease are often renewed by overheating the system, by improper indulgence of the appetite, and by sudden changes from a warm to a cold atmosphere.

2381. TREATMENT. I have cured several cases of tetter by making frequent applications of meadow fern ointment, and giving either the alterative mixture, or the tea for impurities of the blood, (1518) two or three times a day. The affected part should be washed every night and morning with warm water and Castile soap, and rinsed with pure water, or a tea of bayberry, pond lily, or sumach berries. The ointment, as mentioned above, is then to be applied, and if the skin is not too irritable, it may be preceded by a wash of the tincture of lobelia. The bowels must be kept regular, (1896, *et seq.*) and if there is a loss of appetite, a dose of spiced bitters may be taken before each meal. Attention to diet, and cold bathing, are highly efficacious in this complaint. (1706.) The patient must forego the use of butter, fat meat, tea, coffee, and the superfine flour bread; and if he is not disposed to employ the cold bath, should rub himself every night and morning with a coarse towel, or flesh brush.

2382. The different external applications recommended for ringworm and shingles, may be employed with equal advantage in tetter. The vapor bath is a valuable remedial agent, inasmuch as it cleanses and softens the skin, which is of paramount importance.

2383. In tetter of long standing, it is necessary to administer two or three courses of medicine.

2384. When the scabs fall off and leave raw or ulcerated surfaces beneath, the parts should be washed with soapsuds, followed by some mild astringent tea, such as witch hazel, or sumach leaves, and poultices of slippery elm applied. In the event of an acrid discharge, poultices should be applied during the administration of the vapor bath, to absorb it, lest by coming in contact with the healthly skin, it should cause an extension of the disease.

THIRST.

2385. This is owing to a dryness of the glands of the mouth and throat. It is one of the characteristic symptoms of fever, and occurs also in diarrhœa, dysentery, and all profuse discharges from the body. It rarely troubles those who confine themselves to an exclusively vegetable diet.

2386. Drinking large and frequent draughts of cold water, in consequence of thirst, is a pernicious practice, for it chills the stomach, and lays the foundation for many obstinate diseases.

2387. TREATMENT. I know of no better remedy for thirst, where it has become habitual, than cayenne tea, which may be

taken in the dose of half a tea-cupful, or more, three or four times a day. The thirst in fevers, however urgent, may generally be relieved by a few doses of this tea.

TIC DOULOUREUX.

2388. Tic douloureux consists of a severe and darting pain along the course of the nerves in various parts of the body, but chiefly in the face. The sensation is felt in the forehead, temples, cheeks, mouth, lips, tongue, and ball of the eye, according to the particular nerve which is affected. The same kind of pain is felt in the upper and lower extremities, and in the internal organs, as the bladder, stomach, bowels, and womb. It occurs in paroxysms of longer or shorter duration, and sometimes makes its attack with the suddenness of an electric shock. The slightest touch or movement of the body will often produce a paroxysm. In some instances the disease continues for many years. The part affected is tender to the touch, and sometimes there is a twitching or convulsive action of the adjacent muscles.

2389. Some physicians are in the habit, in this affection, of dividing the nerve by a surgical operation, forgetting that the pain is almost sure to return very soon in a neighboring part; while others not only bleed, blister, leech, cup, and dose with calomel, but destroy the sensibility of the nervous system by the administration of opium, prussic acid, and other deadly narcotics.

2390. An eminent medical writer observes—"Routine practitioners are too much in the habit of bleeding whenever the pain is severe, and of giving calomel or the blue pill when the pain is referred to the region of the liver. I have been consulted by individuals whose constitutions were injured by the frequent repetition of powerful remedies, and by some who never can regain the loss of blood, or recover from complaints thereby produced, and the too frequent use of mercurial preparations."

2391. Treatment. In tic douloureux, there is generally more or less disorder of the digestive organs, and hence the stomach should be cleansed with an emetic, followed by the use of spiced bitters, and an occasional dose of cayenne, bayberry, and nerve powder, especially on going to bed. In chronic cases, it is adviseable to administer a few courses of medicine.

2392. The affected part should be bathed frequently with the strongest tincture of cayenne, and if this does not afford relief, a cloth or flannel moistened with the tincture may be applied, together with a heated stone wrapped in a damp cloth.

2393. Particular attention must be paid to the bowels, using enemas, or some other appropriate remedies, if they are confined.

2394. Lobelia pills, or an infusion of scullcap, will be found an excellent medicine in this complaint. The stimulating tea, administered to the extent of producing perspiration, will also afford relief in many instances.

2395. The stimulating liniment is a valuable external application.

2396. Tic douloureux is frequently dependent on a decayed tooth, and in that case the tooth should be extracted by some skilful dentist.

TOOTHACH.

2397. When a tooth decays, and the nerve becomes exposed, it is usually followed by severe pain, which is increased by taking cold. The face and gums frequently become sore and swollen, and hence the term *ague in the face*. Pain in the teeth may arise from other causes than decay, however, and on this account, the individual should not be too eager to have them extracted. Toothach is often peculiar to pregnancy, and is occasioned also by many nervous disorders. Persons who have taken mercury, are extremely liable to it, even before the teeth have begun to decay.

2398. TREATMENT. Composition, cayenne, rheumatic drops, or any of the warming medicines, will often afford relief; and if the individual is in bed, a heated stone wrapped in a damp cloth may be placed at his feet. If the tooth is hollow, a piece of lint moistened with rheumatic drops, or summer savory oil,* may be introduced into it with advantage.

2399. A flannel moistened with hot rheumatic drops, or vinegar and cayenne, (1531) and applied to the face, will often ease the pain.

2400. Composition tea, with a small portion of lobelia, is a valuable remedy, provided the patient sits near the fire so as to favor perspiration. The lobelia need not be employed to the extent of producing nausea.

2401. A small bag of cayenne placed between the cheek and teeth, has often been used with success; or the cayenne may be confined between two thin layers of cotton wool, about the size of a penny, and the whole wetted with rheumatic drops.

* Any of the essential oils may be employed.

This application is followed by a free discharge of saliva and cold ropy mucus, and in fifteen or twenty minutes the pain will generally subside.

2402. The local application of vapor to the face, will sometimes afford almost instantaneous relief. To accomplish this, a blanket may be thrown over the head, and vapor generated by immersing a heated stone in a basin of water, which the individual may conveniently hold in his lap; or a heated stone wrapped in a damp cloth, and wetted with vinegar, may be applied to the face, under the bedclothes.

TYPHUS FEVER.

2403. This disease was formerly known as nervous, or putrid fever, and is thought by some to be contagious, but it is probably owing to impure air, unwholesome food, a general neglect of the health, and other causes which tend to depress or impair the vital energies. It is most prevalent in jails, camps, hospitals, and the crowded and filthy hovels of the poor.

2404. Typhus fever commences with a feeling of lassitude, want of appetite, debility, restlessness, dull and heavy eyes, giddiness, and confusion of ideas. These symptoms continue a few days, or perhaps a week, when the patient is attacked with chills, succeeded by flushes of heat; great depression of spirits; disgust for all kinds of food; white, and clammy tongue; and pains in the head, back, and sometimes extremities. Vomiting also occasionally takes place. Fever now ensues, with the train of symptoms peculiar to the disease, such as dryness of the lips, thirst, giddy sensation on rising to walk, heavy feeling of the head, disinclination to motion, disturbed and unrefreshing sleep, and a tendency during the night to delirium. The skin is usually dry, but in some instances perspiration is observed on the upper portion of the body. Diarrhœa is sometimes an early symptom, though the bowels are generally torpid. Cough, difficulty of swallowing, and red and watery eyes, are liable to occur. Bleeding at the nose is not uncommon, and arises in various stages of the complaint. Blood is also discharged now and then from the mouth, nose, and bowels. Rose spots on the abdomen are frequently observed, after the disease is fairly established. The memory now becomes imperfect, the hearing obtuse, the utterance slow and hesitating, and the delirium more wild and frequent.

2405. The sinking stage next ensues, which is marked by great prostration, black incrustations about the lips and teeth, indifference to surrounding objects, pungent heat of the skin, swelling

and tenderness of the bowels, rapid pulse, livid, or sunken countenance, rough and black tongue, dark spots upon the surface, watery and offensive stools, picking at the bedclothes, catching at imaginary objects, twitching of the lips, jaws, eyelids, and hands, hiccough, low muttering delirium, and a death-like stupor.

2406. A natural warmth and moisture of the skin, abatement of the delirium, moist clean tongue, and a return of the appetite, are favorable symptoms; but if the delirium is continued, with an unnatural expression of the countenance, pain and swelling of the bowels, cough, difficulty of swallowing and breathing, loss of sight, purple spots on the body or extremities, red, swollen, or black tongue, black incrustations about the lips and teeth, cold, clammy sweats, picking at the bedclothes, and offensive, or involuntary stools, we infer that there is great danger, though the patient is not to be abandoned as incurable.

2407. TREATMENT. In the early stage of typhus fever, we should administer two or three thorough courses of medicine, if so many are requisite, to remove the disease before the constitutional powers have been seriously impaired.

2408. The courses may be repeated every twelve, twenty four, or thirty six hours, according to the degree and urgency of the symptoms; and in the intervals, we must endeavor to keep up a gentle and equal perspiration over the whole body, as in fevers of every description. For this purpose I have been in the habit of using the following preparation. Take of green lobelia from a half to a whole tea-spoonful; bayberry and scullcap each a tea-spoonful; cayenne two tea-spoonfuls; boiling water two tea-cupfuls. Steep in a covered vessel, strain, and sweeten to suit the taste. Keep the tea warm by the fire, and administer a table-spoonful of it every ten, fifteen, or twenty minutes, until the skin becomes moist. It is not necessary that the lobelia should be used in a sufficient quantity to produce any considerable degree of nausea. During the administration of the tea, a stimulating injection (1567) should be given every hour or two, which will have a special influence in keeping up a healthy action in the system, and maintaining the equilibrium of the circulation. A heated stone wrapped in a damp cloth should also be placed at the feet. If, notwithstanding this treatment, the skin becomes hot and dry, lobelia should be given to cleanse or evacuate the stomach, and if the patient is much enfeebled or prostrated, the infusion should be used without the sediment, as directed in paragraph 1612.

2409. A tea of composition, or of cayenne and bayberry, will often suffice to keep up the perspiration after a course, without

the aid of lobelia, but if there is a tendency of the fever to return, this medicine should always be employed in small and frequently repeated doses. Injections, let it be borne in mind, are of the utmost importance, and if the stools are offensive, or the bowels swollen, or painful, they should be employed frequently.

2410. Thirst may be speedily allayed by the use of cayenne tea.

2411. The diarrhœa which often occurs in typhus fever, may be checked, in many instances, by a tea of black pepper, steeping a tea-spoonful of the powder in a tea-cupful of boiling water, and adding sugar to suit the taste. If the first dose is not effectual, it may be repeated in one or two hours.

2412. If the bowels are painful, or distended with wind, applications may be made to the abdomen, as directed in paragraph 2095.

2413. The sick chamber should be ventilated frequently, without exposing the patient to currents of air. (1634.) The chamber should also be kept perfectly clean and sweet in other respects, and the bedclothes, as well as the patient's linen, changed at least once a day.

2414. If the skin is very hot, great advantage will accrue from sponging it with cold water, previously administering a dose of cayenne, or composition, to keep a determination to the surface. (2274.)

2415. Purgatives must be avoided in typhus fever, particularly the latter stages of it, for there is a tendency of certain glands in the small intestines to become inflamed, or ulcerated, and under these circumstances, a cathartic can only be employed at the risk of the patient's life.

2416. If the brain is affected, as is the case where delirium, or stupor occurs, the medicines are more or less tardy in their operation, and require to be given in an increased quantity.

2417. The food, throughout the disease, should be liquid, consisting of wine whey, slippery elm tea, or any similar preparation, which will not irritate the stomach; and even during convalescence, the diet should be light, and easy of digestion, as inattention to this matter is not unfrequently a cause of relapse. As soon as the fever is entirely subdued, the bitter or restorative medicines are to be employed, to increase the tone of the stomach, alternating them occasionally with cayenne, so as to keep up the requisite degree of action in the system.

ULCERS.

2418. These are formed by a process termed *ulceration*, (1365, *et seq.*) and result from a variety of causes, such as wounds, burns, setons, issues, and the external application of caustic, blisters, and mustard poultices. If the blood is impure, the slightest scratch or bruise is liable to degenerate into an ill-conditioned sore or ulcer, especially in cold weather. Scrofulous and syphilitic ulcers have already been described under the appropriate heads.

2419. When an ulcer is in a healthy state, says Dr. S. Cooper, it discharges a whitish matter resembling cream, and the granulations are small, red, and pointed at the top. When the granulations have risen to the level of the surrounding skin, those next the old skin become smooth, and covered with a thin semi-transparent film, which afterwards becomes opaque, and forms cuticle. An ulcer answering this description, is in a healing state, and the parts should be kept perfectly clean. The florid color of the granulations, says Sir Astley Cooper, is produced by the blood-vessels having a considerable quantity of arterial blood, and a free circulation.

2420. In *indolent ulcers*, says Dr. S. Cooper, "the edges of the surrounding skin are thick, prominent, smooth, and rounded. The granulations are smooth and glossy, the pus or matter is imperfectly formed, and adheres so firmly to the surface of the ulcer that it can scarcely be wiped away. The bottom of the sore forms almost a level, and its general aspect gives the idea of a portion of the skin and parts underneath having been for some time removed, and the exposed surface not having commenced any new action to fill up the cavity. Indolent ulcers form the majority of those which are to be seen in the large hospitals of London. Their granulations are endued with a weak living principle, and are very apt to be suddenly absorbed without any assignable cause."

2421. *Irritable ulcers* are extremely tender, bleed very easily, and have jagged or uneven edges. There is no distinct appearance of granulations, but only of a whitish, spongy substance, which discharges a thin acrid fluid.

2422. In *malignant ulcers* the surrounding skin is of a livid color, and covered with small vesicles or blisters, as in mortification. They sometimes corrode or destroy the bones. Among the causes of this species of ulcer, is the use of mercury.

2423. Ulcers frequently form on the legs, in consequence of an impeded circulation in the veins. They are more frequent in

men than in women, particularly those who are much upon their feet. The diseased veins are enlarged, and irregular in their course, and the "surface covering them is formed into a crust, under which a quantity of serum is secreted." Veins in this state are said to be *varicose*, and surgeons, in order to effect a cure, are in the habit of tying and dividing them, but the practice, says Sir Astley Cooper, is replete with danger. He adds, "another overwhelming objection to the operation is, that when it does not prove fatal, its ultimate effects are perfectly useless."

2424. An ulcer occasionally extends to a considerable depth, so "that the discharge has to travel through a channel before it arrives at the surface," and is known by the name of *fistula*. It arises in different parts of the body, but is most common about the anus, and hence the term *fistula in ano*.

2425. Treatment. In the local treatment of ulcers, they should be washed clean with warm soapsuds, followed by a tea of witch hazel, bayberry, or some other appropriate astringent, and a poultice of slippery elm applied, repeating the application every twelve or twenty four hours, according to the necessity of the case. If the sore is hot and painful, the poultice should be wetted occasionally with cold water.

2426. Bayberry tea is an excellent cleansing wash for sores, unless they are very irritable, and then a tea of witch hazel, pond lily, or sumach is preferable, inasmuch as it is devoid of pungency, and of a mild and soothing nature.

2427. Ulcers of an indolent character require to be stimulated, and after they have been washed, as directed above, they may be wetted with rheumatic drops, or tincture of myrrh. This is particularly adviseable where the sore is malignant, or gangrenous. A portion of ginger, or rheumatic drops, may be added to the poultices, if it can be borne by the patient.

2428. Ulcers are sometimes signally benefited by sprinkling them with pulverized loaf sugar, previous to the application of the poultice.

2429. Fistulas, and ulcers of every description, which extend for any distance beneath the surface, should be syringed every night and morning, as directed in paragraph 2291, particularly if they are offensive, or the seat of an acrid discharge. By this means the sore is thoroughly cleansed, and brought into a healing condition. A small syringe should be employed, and the fluid injected with as little force as possible, especially if the part is very sensitive. Nevertheless, we should always be certain that we reach the bottom of the ulcer, or the treatment will fail in produ-

cing the desired effect. The tincture of myrrh has been injected into fistulas, and ulcerated cavities, with great advantage. (906.)

2430. If a sore is irritable, the carrot poultice will be found highly useful; or if it is extremely fetid, an application may be made of the yeast, or charcoal poultice.

2431. Ulcers on the lower extremities, which are dependent on an enlarged state of the veins, cannot be cured, as a general thing, unless the patient avoids an erect position. If he is much upon his feet, there is no opportunity for the veins to diminish in size, and the ulcers become extremely obstinate. It is a very good practice to bandage the limb, commencing at the foot, previously laying a plaster of the stimulating liniment on the diseased surface.

2432. In the event of *proud flesh*, as it is termed, which is nothing more than a prominent or unhealthy state of the granulations, the sore may be washed with an infusion of sumach berries, or rheumatic drops diluted with water; and a poultice of slippery elm, prepared with a tea of witch hazel, or bayberry, applied. Lint moistened with sweet oil, nerve ointment, or the green salve, is frequently applied to keep down granulations, and as more or less pressure is necessary, it must be confined to the sore with an appropriate bandage. The poultice or lint may be employed, according to the circumstances of the case.

2433. Besides external applications, medicines are to be used internally to restore the general health, for while the blood is impure, and the whole system disordered, it is impossible that an obstinate ulcer can be healed. This is verified at the public hospitals and alms houses, where patients remain for months, and even years, with what are termed *incurable ulcers*, merely because adequate means are not taken to improve the health, and invigorate the constitution. Tonics, stimulants, enemas, and the vapor bath are to be employed, as the case may seem to demand; and if the ulcer has been of long standing, it will be necessary to administer a few courses of medicine. Attention to diet is indispensable. (See remarks on that subject in paragraph 1706.) I have known chronic ulcers of ten or fifteen years' standing, to be cured in five or six weeks by a regulated diet, and an occasional course of medicine. The wife of Mr. Wilson of Philadelphia, who is well known in that city, was afflicted for fifteen years with an ulcer, which her medical attendants, after exhausting all the resources of their art, told her would speedily prove fatal, but by taking several courses of medicine, she was restored to health in six weeks. Dr. Comfort was the attending physician.

WHITE SWELLING.

2434. White swelling is an inflammation of a joint, but without redness or discoloration of the skin, as the name implies. It is generally seated in the knee, ankle, wrist, or elbow, and is a common, as well as a distressing malady. It is caused by sprains, bruises, exposure to wet and cold, and particularly by the use of mercury. If the knee is the part affected, it becomes incapable, sooner or later, of supporting the full weight of the body, and is forced into a curved or bent position. In the early stage of the complaint, the swelling is usually inconsiderable, but ultimately the joint becomes very large, while the other parts of the limb are emaciated. If the disease is not arrested, suppuration ensues, and troublesome ulcers are formed about the joint. The health in the meantime is much impaired, and at last the patient is exhausted by copious diarrhœa and night sweats.

2435. TREATMENT. The general health requires particular attention in this complaint, and if much impaired, it should be reinstated by the administration of a few courses of medicine. Between the courses, composition, cayenne, spiced bitters, enemas, and the vapor bath, may be employed as circumstances require. The alterative mixture is also a useful medicine. Attention to diet, and cold bathing, provided the latter is admissible, should not be neglected. (1706.)

2436. The local application of vapor to the affected joint once or twice a day, as directed in paragraph 1499, will be found highly efficacious in removing the pain and inflammation, and establishing a healthy action in the part. After the process has been completed, the joint may be rubbed briskly with warm vinegar and cayenne, (1531) or the stimulating liniment, and wrapped in a flannel to keep the skin moist. If there is much pain, a flannel wrung out of the vinegar and cayenne may be applied, together with a heated stone, or bottle of hot water, wrapped in a damp cloth.

2437. During the administration of a course of medicine, the following poultice may be confined to the swelling with advantage. Stir Indian meal into boiling water until it is of the desired consistence, and mix with it a tea-spoonful or more of cayenne, and two table-spoonfuls of brown lobelia. When the course is finished, the poultice may be removed, and the joint wrapped in flannel, as directed above.

2438. If suppuration takes place, the elm and ginger poultice must be applied until the inflammation is subdued, and the matter

all discharged. The ulcer may then be dressed with healing salve.

2439. Dr. Thomson informs me that previous to suppuration, he has used the following poultice with particular benefit. Take of the green root of comfrey, and scrape it until you have a sufficient quantity of the pulp or mucilage; add the white of one or two eggs, and a glass or more of fourth proof brandy; beat these together in a mortar, until you have a poultice of the proper consistence. Spread the mixture upon a piece of linen, or fine soft leather, sufficiently large to surround the joint, and confine it with appropriate bandages. The poultice is to be renewed as often as it becomes dry. The particular advantage of this application is, that it gradually contracts upon the swollen joint, and diminishes the swelling, without increasing the pain, or irritation.

WHOOPING COUGH.

2440. This is a disease peculiar to children, though it occasionally attacks adults. It frequently prevails as an epidemic, and is most common in the spring and autumn, commencing with the symptoms of a common cold. It does not usually occur in the same individual a second time. The cough is moderate at first, but in the course of a week or fortnight, increases in violence, and acquires a peculiar shrill and whooping sound. It makes its attacks in fits or paroxysms, which continue for a longer or shorter time, and terminate in an expectoration of phlegm or mucus. In some instances vomiting occurs. During the exertion of coughing, the eyes become prominent, and the countenance red, or livid. The bowels are mostly disordered, accompanied, not unfrequently, with loss of appetite, headach, fever, and a coated tongue. Oftentimes, however, the patient does not experience any particular indisposition. The malady seems to depend upon an inflammation of the air passages of the lungs, and is rendered more violent by exposure to cold. If not seasonably arrested, it may continue for six or eight weeks, or perhaps as many months, and terminate at last in some obstinate or dangerous malady.

2341. During the paroxysms of coughing, the patient is sometimes in danger of suffocation, inasmuch as the coughing is continued a considerable time before taking a breath.

2442. Treatment. Courses of medicine are not necessary in this complaint, excepting where the symptoms are urgent, or the general health is very much impaired. If the bowels are

irregular, an injection should be administered once or twice a day, and exposure to wet and cold avoided. The feet, in particular, must be kept warm and dry. The diet should be light and nourishing, dispensing with the use of fat meat, butter, and all the grosser articles of food. The wheat jelly, or the unbolted wheat meal gruel, will be of essential service in regulating the bowels.

2443. If the air passages of the lungs are loaded with phlegm, so as to oppress the breathing, an emetic of lobelia will afford immediate relief.

2444. Where the appetite is impaired, the spiced bitters may be taken before each meal; and if the symptoms are violent, the patient should be kept in a gentle perspiration with composition tea; or if this is insufficient, with an infusion of cayenne, bayberry, scullcap, and green lobelia. (1515.) The latter preparation is highly serviceable in allaying the cough. Among other useful remedies which may be employed for this purpose, are the cough jelly, cough powder, alterative mixture, and the tincture of lobelia dropped on loaf sugar. (1283.)

WORMS.

2445. "Worms, says Cuvier, can only propagate themselves in the interior of the bodies of other animals. There is hardly any animal which does not give support to several kinds of them, and frequently the same species of them does not inhabit more kinds of animal than one. They are not only found in the intestinal tube, and the ducts communicating with it, but also in the cellular tissue, and the substance of the brain, liver, and other organs. The difficulty of conceiving how they arrive in these situations, together with the observation that they are never met with out of the living body, has caused some naturalists to believe in their spontaneous generation. But it is now sufficiently settled, not only that the greater part of them produce either eggs or living young, but that they have distinct sexes, which copulate like other animals. We are therefore obliged, says Cuvier, to believe that they are propagated by germs sufficiently minute to enter the smallest passages, and that animals sometimes contain these germs at the time of birth."*

2446. Among the different species of worms which infest the intestinal canal, the most common is the *long round worm*, which is tapering at both ends, and measures from six inches to a foot in length. It inhabits the small intestines, says the work from

* American editors of Dr. Marshall Hall's Practice of Medicine.

which I have already quoted, and is supposed to feed upon the chyme. It sometimes creeps upward to the stomach, and in rare instances to the mouth. "The symptoms indicating its presence are equivocal; but are commonly considered to be, starting in the sleep, itching of the nose, irregular or excessive appetite, and more or less emaciation. Nevertheless these worms are often suspected of being present when they do not exist, and often exist in healthy persons without doing any harm. They are expelled in acute diseases, of which they are not the cause."

2447. The *maw* or *pin worm*, as it is termed, is not more than half an inch in length, with a sharp tail, and is found principally in the rectum, where it causes an itching and distressing sensation, particularly after having retired to rest. "Many individuals," say Drs. Bigelow and Holmes, in their edition of Marshall Hall's Practice, "are infested with them from childhood, but get rid of them as they advance in years. Some, however, are troubled with them during the whole of a long life, though they are represented as less annoying after middle age, than before. They most commonly appear periodically, both in children and adults, after intervals of from three to six weeks. During the intervals they are neither felt, nor seen in the discharges. Their periodical return is announced by a sense of itching and burning at the extremity of the rectum, felt principally in the evening, sometimes producing tumefaction, and eruption of the neighboring skin. This irritation continues to recur every evening for a week, or more, and then ceases. During this time the worms are discharged alive and active in every alvine evacuation. Cathartics and enemeta bring away vast numbers of them, but without diminishing the annoyance occasioned by those which remain behind. At length they spontaneously cease to appear, the irritation subsides, cathartics no longer bring them to light, and the inexperienced practitioner flatters himself that the evil is remedied. Nevertheless, after a few weeks, they again return in undiminished numbers, attended by the same phenomena as before. Whether the new race are cotemporaries of the old, or descendants from them, is not easy to tell. They have been found in other parts of the alimentary tube, as well as the rectum. The food of these animals appears to be the mucus which lines the intestinal canal. Buried in this substance, they resist the effect of the most violent cathartics and vermifuges, oil of turpentine, and croton not excepted. If we may be permitted to indulge in an hypothesis, it is, that during a greater part of the time, they remain quietly imbedded in this mucus, deriving from it their habitation and nourishment, being at the same time secured from the effects of the peristaltic motion; but at certain periods, perhaps at their gene-

rating seasons, they issue forth from this covert, and mingle themselves in the contents of the alimentary canal, in consequence of which they are liable to be expelled with the common mass."

2448. The *tape worm* is well known for its peculiar and extraordinary character. It is sometimes forty or fifty feet in length, consisting of a series of joints, which are about a quarter of an inch square. It inhabits the small intestines, and is sometimes found in the stomach. It is flat, like a piece of tape, and hence its name. "It is capable," say Drs. Bigelow and Holmes, "of subsisting in the intestines for an indefinite number of years, continually casting off joints, which appear in the stools. Whether these joints are reproduced, and, if so, in what manner, is a subject of hypothesis, upon which different opinions are entertained. The symptoms indicating the presence of this worm are slight, so much so as not to attract notice, until the joints are observed in the discharges, or are found in the clothes or bed, having crawled away from the rectum. But generally, if the worm has attained considerable size, there is more or less pain, sense of weight and uneasiness in the abdomen, voracious appetite, nausea, itching of the anus, and nose, and sometimes emaciation. M. Guilbert thinks it unnecessary to use any remedies for the tape worm, having observed that it may exist for a long time without any disturbance in the economy, provided the patient be plentifully supplied with nourishing food. In the end it will disappear spontaneously."

2449. Treatment. Equal parts of composition and spiced bitters is an excellent medicine for worms. A tea-spoonful of the powder, steeped in two thirds of a tea-cupful of boiling water, and sweetened to suit the taste, may be given two, three, or four times a day. This will generally effect a cure in a mild attack of the complaint.

2450. Injections are highly efficacious, particularly in case of the maw or pin worm, which is usually confined to the rectum. They may be administered with advantage several times a day, and if the patient is costive, should always constitute a part of the treatment.

2451. Bayberry is an important remedy, because it detaches the vitiated mucus which lines the intestinal canal, (807, 822) and which, I have no doubt, is invariably present during the existence of worms. It may be given in the form of composition, as directed above, or the tea may be administered, with a portion of cayenne.

2452. Where the symptoms are urgent, or the health seriously impaired, one or two courses of medicine will be necessary.

2453. Purgatives are generally regarded as indispensable in worm complaints, but although they may afford temporary relief, they rarely fail to produce a morbid condition of the bowels, which serves to prolong the disease.

2454. If children were properly managed with respect to diet, I suspect they would rarely or never be troubled with worms. The manner in which they are pampered at the present day, by inconsiderate parents, can scarcely fail to derange the stomach and bowels, and an attack of worms is almost a necessary consequence. If children were confined to a vegetable diet, which, in fact, is more nutritious than animal food, (1684, *et seq.*) allowing them ripe fruit at their meals, and milk, or pure soft water for drink, they would cease to be afflicted with the malady. Exercise in the open air, also, when the weather permits, is indispensable to a healthy and vigorous state of the general system.

WOUNDS.

2455. Wounds consist of cuts, lacerations, bruises, and punctures. Added to these, we have what surgeons term gun-shot wounds, which are produced by bullets, and other hard bodies projected from fire-arms.

2456. A *cut*, in surgical language, is an *incised wound*, and is made with a knife, or any other cutting instrument. It will heal very readily by bringing the divided surfaces into contact with stitches, or adhesive plaster. Fibrine or adhesive matter (117) is thrown out by the wounded vessels, which unites or glues the parts together, in the course of forty eight hours. This is called *healing by the first intention*, which is one of the unmeaning phrases in surgery, signifying that a cure takes place without suppuration. "The vessels of the wounded surface," says Dr. S. Cooper, "cease to bleed, and their extremities become impervious to the blood itself, but not to the fibrine or coagulating lymph which forms the general bond of union between living parts. This uniting medium is the primitive and most simple connexion that takes place between the two sides of a wound. In many cases, however, where the wound is put into a state of apposition, before the hemorrhage has had time to cease, no doubt a coagulum of blood itself constitutes the first bond of union, and, as wounds must thus be frequently united through the medium of red blood, the propriety of cleansing a wound from it so exactly as some surgeons do may be called in question. The simple union of the sides of a wound is what may be considered as taking place directly after they have been brought into contact. The next step

in the process of union by the first intention, is the generation of vessels in the lymph, or blood, and this is soon followed by an intercourse between the vessels of the two sides of the wound.

2457. "The celerity with which the process of union by the first intention is completed, must excite the admiration of the philosophical surgeon. In the short space of seventy two hours, the wound produced by amputation of the thigh is often securely united throughout its whole extent, without any suppuration, excepting just where the ligatures are situated. Incised wounds of a moderate size, may in general be completely healed by this method in forty eight hours."

2458. *Lacerations* are wounds in which the parts have been violently torn asunder. They differ from incised wounds, inasmuch as they bleed but little, even though the largest blood-vessels have been injured. Limbs have been torn from the body without the occurrence of dangerous hemorrhage. Lacerated wounds are more disposed to inflame than the *incised*, and also more frequently affect the general system.

2459. *Bruises* or *contusions* have been described under the appropriate head.

2460. A *punctured wound* is made with a pointed instrument, such as a bayonet, a needle, or a shoemaker's awl. It is far more dangerous than a cut, and is often followed by severe inflammation, and sometimes an extensive collection of matter. Great agitation of the nervous system frequently ensues, "and this has been attributed to the injury of tendons, or nerves. This doctrine is now almost quite exploded, as surgeons often see nerves and tendons wounded without the occurrence of great constitutional disorder. The explanation of the fact, that great derangement of the system is very apt to follow punctured wounds, is not yet unfolded in a satisfactory manner; but the fact itself is fully established in the surgical records of all ages, and the firm basis of daily experience."

2461. In the treatment of a wound, where it is necessary to bring the divided surfaces into contact, it should be washed with a sponge and lukewarm water; and if the hemorrhage does not readily subside, it may be checked by making steady and continued pressure with the sponge upon the wounded vessels. This accomplished, the coagulated blood is to be washed away, and the lips of the wound brought together with stitches, or strips of adhesive plaster, or both, allowing spaces between the latter for the escape of blood and serum.

2462. Fine white sewing silk should be employed for the stitches or sutures, taking care that it is sufficiently strong for the purpose required. The stitches may be half an inch or an inch

apart, according to the extent or character of the wound, and after the expiration of five or six days, they should be removed, lest they excite inflammation. In making a suture, the needle is to be passed through the skin on both sides of the wound, at opposite points, and the thread tied in a knot, so as to bring the two surfaces into apposition. In addition to the sutures, adhesive plaster may also be applied, as mentioned above, to give still firmer support to the parts.

2463. If a wound becomes hot and painful, cloths should be applied, and wetted occasionally with cold water. This will generally afford prompt relief, and prevent the development of inflammation. Composition, or cayenne and bayberry, should be taken internally at the same time, to keep up a healthy action in the system. If the general health is much affected, it will be necessary to administer a course of medicine. After the course, the patient should be kept in a gentle perspiration, for while the skin is moist, and the equilibrium of the circulation maintained, unfavorable or alarming symptoms will not arise.

2464. In the event of suppuration, poultices must be applied, as directed under the head of ulcers.

2465. Fresh wounds are signally benefited by wetting them two or three times a day with rheumatic drops, or the tincture of balm of Gilead buds. (1039.)

2466. If the pain is severe, it may be allayed by giving composition tea, until perspiration ensues; or if this does not produce the desired effect, the stimulating tea may be employed, or any other tea containing a small portion of lobelia.

2467. "If the wound be in a muscular part, more especially in transverse wounds of muscles, it is required that the position of the limb be carefully attended to, that the wounded muscle be relaxed as much as possible, and its separated portions kept in contact."

2468. Parts which are nearly separated, as a finger, or the nose, will readily unite by keeping the two surfaces in apposition with sutures, or adhesive plaster. "Mr. Hunter removed the spur of a cock, and placed it in the comb by incision, where it not only adhered, but grew. A tooth extracted from the human subject and placed in the comb of a cock, will also adhere."

2469. If a bullet is lodged in the soft parts, it should be extracted, if this can be accomplished without too much difficulty; but otherwise, it need not excite any alarm, for it may remain imbedded in the flesh for a life time without doing any injury. Splinters of bones, and other bodies of a similar character, frequently work themselves out by a natural process.

2470. The air must be excluded from wounds, or it will render them painful, and interfere with the healing process.

2471. *Wounds of Arteries and Veins.* If an artery is wounded, the blood flows rapidly in jets, corresponding with the contractions of the heart, and is of a red or florid color; if a vein, the bleeding is slow, gradually filling the wound, and the blood is dark or purple.

2472. In checking the flow of blood from an artery, pressure is to be made on the vessel between the wound and the heart; but if the hemorrhage is from a vein, pressure is to be made on the side of the wound furthest from the heart, for in the arteries, the blood has an outward direction, while in the veins, it always moves inward towards the heart.

2473. Pressure is always sufficient to arrest the bleeding from a vein, but in a large artery, it is only of service until the vessel can be secured with a ligature. This is to be done by drawing the artery out of its sheath with a hook or tenaculum, and tying it with a piece of catgut, or two or three strands of white sewing silk. Both ends of the wounded artery should be secured, and if the vessel is deeply seated, the ligature cannot be passed round it excepting with a curved or crooked needle.

2474. In modern surgery, it has been found that twisting an artery ten or a dozen times with some convenient instrument, will answer instead of a ligature, but it is generally considered adviseable to apply the latter, in case the vessel is large. In the smaller arteries, twisting no doubt answers an excellent purpose.

2475. The plan by which nature arrests the bleeding of a small artery, is as simple as it is admirable. As soon as the vessel is divided, it draws up within its sheath, and contracts at the mouth, so that the blood is enabled to coagulate, and fill up the artery adjacent to the wound with a solid plug. In a large artery, however, the force or impulse of the blood from the heart is so strong, as not to admit of coagulation, and hence the necessity of a ligature.

YELLOW FEVER.

2476. This disease is characterized by high fever, yellow color of the skin, and vomiting of black ropy matter, resembling coffee grounds. It is peculiar to warm climates, breaking out in the hot weather of summer, and particularly in the neighborhood of low and marshy districts. It is no doubt caused

by the decomposition of vegetable and animal substances, which fills the whole atmosphere with impurities. Under these circumstances, persons who are intemperate in their habits, or indulge in any excesses which weaken the body, are very liable to be attacked. Individuals who reside where the disease is prevalent, should avoid exposure to the rays of the sun, as well as the cool damp air of the night.

2477. Previous to an attack, the patient generally complains of headach, giddiness, pains in the back and limbs, chilliness, loss of appetite, nausea, debility, costiveness, and a sense of weight or oppression at the stomach. These symptoms, in the ordinary course of the disease, are succeeded by a hot and dry skin, great thirst, retching, flushing of the face, anxious expression of countenance, shooting pains in the head, back, and extremities, vomiting of yellow or greenish matter, restlessness, hurried breathing, intolerance of light, delirium, and a severe, burning pain in the stomach. The vomiting becomes more frequent and distressing as the disease advances, and the skin and eyes assume a yellow color. The latter symptoms, however, may not occur for four or five days from the commencement of the attack. The tongue which was red at first, or covered with a white, or yellow coat, becomes dark colored, or black. In the last stage of the complaint, the pulse sinks, the *black vomit* commences, and the extremities become icy-cold. Profuse diarrhœa is a common symptom, accompanied, oftentimes, with delirium, hiccough, stupor, convulsions, swelling of the abdomen, and hemorrhage from the bowels, and other free passages.

2478. The *black vomit* consists of blood almost in a putrid state, which escapes from the vessels of the stomach. Magendie has produced it in dogs, by injecting a small portion of putrid water into their veins.

2479. Treatment. The force of this disease seems to be expended principally on the stomach and liver, and hence we must resort to active treatment to relieve these organs, or it will be impossible to effect a cure. A thorough course of medicine should be administered without delay, and if this does not afford the desired relief, it should be repeated as soon as the skin becomes hot and dry, or other unfavorable symptoms return.

2480. Between the courses, the patient should be kept in a gentle perspiration by the use of enemas, and cayenne and bayberry tea, containing a small portion of lobelia.

2481. Cayenne is a highly efficacious remedy, and should be freely employed. Dr. Thatcher, in his Dispensatory, states that where the stomach was too irritable for calomel in the yellow fever

of the West Indies, cayenne made into pills was administered, and it cured even after the black vomit had commenced. (747.)

2482. After the first day or two, there is sometimes a remission of the symptoms, which leads the patient to suppose that he is regaining his health, but this is often a deceitful calm, and unless the stomach has been thoroughly cleansed, and the skin is moist, and of a natural temperature, the medicine should be given in full and frequent doses.

2483. The treatment which has been recommended for typhus fever, may be adopted with equal propriety in this, and the reader is therefore referred to the remarks on that subject. (2408, *et seq.*)

END OF VOLUME FIRST.

GLOSSARY.

The *technicalities* employed in the first volume of this work, are either referred to in the index, or explained in the subjoined glossary.

ABDOMEN, the belly.
ALVINE, relating to the intestines.
ANEMIA, flatulence.
ANTIPHLOGISTIC, any mode of treatment which weakens the system, or exhausts the vital powers.
ANUS, the fundament or extremity of the great intestine, through which the excrements or feces are discharged.

CANULA, a small tube.
CAPILLARIES, the small blood-vessels which connect the arteries and veins.
CARBON, a name applied by chemists to charcoal.
CARBONIC ACID GAS, fixed air; a compound of carbon and oxygen. It is emitted from burning charcoal, and is found in mines, caverns, and at the bottom of wells.
CATAMENIA, the monthly discharges from the womb.
CATAPLASM, a poultice.
CELLULAR, having little cells.
CHRONIC, a term applied to diseases of long standing; the opposite of *acute*.
CHYLE, the milky fluid produced by digestion, from which the blood is formed.
CLYSTERS, injections.
COMA, stupor; drowsiness.
COMATOSE, having an irresistible propensity to sleep.
CONGESTION, undue accumulation of blood.
CONSTIPATION, costiveness.
CRANIUM, the skull.
CREPITUS, a crackling noise.
CUTANEOUS, relating to the skin.

DECOCTION, a medicine prepared by boiling.
DIAGNOSTIC, distinguishing; characteristic; the sign or symptom by which one disease is distinguished from another.
DIAPHORETIC, a medicine which promotes perspiration.
DIETETIC, relating to diet.
DIURESIS, increased discharge of urine.
DRASTIC, violent, powerful.
DYSPNŒA, oppressed breathing.

EMESIS, vomiting.
EMMENOGOGUE, a medicine which is said to promote the monthly discharge of females.
ENDEMIC, a disease peculiar to certain localities or districts.
ENEMATA, injections.
ERYTHEMA, a slight inflammation of the skin.
ESCHAR, the dead substance produced by applying caustic.
ET SEQ., a contraction of the Latin words *et sequitur*, signifying that which follows.

FARINACEOUS, mealy; pertaining to meal.
FAUCES, the cavity behind the tongue.
FEBRILE, feverish.
FECES, the discharges by stool.
FUNCTION, the action or office performed by an organ.

GASTRIC, relating to the stomach.
GESTATION, pregnancy.

HECTIC, a slow, habitual fever, with sweats and emaciation.
HEMORRHAGE, bleeding from any part of the body.
HEPATIC, relating to the liver.
HERPETIC, having the character of tetter.

IDIOSYNCRASY, any peculiar habit.

LESION, a wound; injury.
LOINS, the small of the back.
LYMPH, a fluid contained in the lymphatic vessels.

MARASMUS, a wasting of the body without apparent disease.
MODUS OPERANDI, the method of operating.
MORBID, diseased.
MUCUS, one of the fluids of the body, as the mucus of the nose.

NARCOTIC, a poison which impairs or destroys the sensibility of the nerves.
NEURALGIA, disease of the nerves.
NOSOLOGY, a systematic arrangement of diseases into classes, orders, genera, and species.

ŒSOPHAGUS, the gullet or meatpipe.
OPPROBRIA MEDICORUM, the disgrace of the physicians.
OSSIFIED, changed into bone.
OXYGEN, one of the constituents of the air, without which we could not exist.

PAROXYSM, a name applied to a periodical attack of a disease which lasts for a limited time and then declines.
PATHOLOGY, the doctrine of diseases.
PER ANUM, by the anus.
PERIOSTEUM, the membrane which covers the bones.
PER VAGINAM, by the vagina.
PHARMACOPŒIA, a dispensatory.
PHYSIOLOGY, the science which teaches the knowledge of living bodies.
POST MORTEM, after death.
PRIAPISM, a continual erection of the penis.
PURULENT, consisting of pus or matter.
PYLORUS, the intestinal orifice of the stomach.

REMITTENT, ceasing for a limited time.
RETCHING, straining to vomit.
RIGOR, a sudden coldness, attended by shivering.

SALIVA, spittle.
SANGUINEOUS, relating to the blood.
SCIRRHUS, a hardening or induration of a gland.
SCYBALA, dry, hard excrements, rounded like nuts or marbles.
SECRETION, a substance derived from the blood, as the saliva, bile, and gastric juice.
SERUM, the watery part of the blood.
SLOUGH, a separation of dead from living flesh.
SPUTA, any kind of expectoration.
SUDORIFIC, that which produces perspiration.
SYNCOPE, fainting.
SYNOVIA, a fluid peculiar to the joints, by which they are lubricated.

TENESMUS, a painful desire to go to stool.
TESTES, the testicles.
THERAPEUTIC, relating to the employment of remedies.
TOPICAL, confined to a particular part.
TROCAR, the name of an instrument used for tapping, in dropsy.

VESICLE, a blister.
VISCERA, the contents of the abdomen and chest, as the lungs, stomach and intestines.
VISCID, sticky, glutinous.
VIS CONSERVATRIX NATURÆ, that power by which the body, in a state of disease, is enabled to regain its healthy functions.

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GUIDE FOR WOMEN.

THE

AMERICAN VEGETABLE PRACTICE,

OR A

NEW AND IMPROVED

GUIDE TO HEALTH,

DESIGNED

FOR THE USE OF FAMILIES.

IN SIX PARTS.

Part I. Concise View of the Human Body, with engraved and wood-cut illustrations. Part II. Glance at the Old School Practice of Physic. Part III. Vegetable Materia Medica, with colored illustrations. Part IV. Compounds. Part V. Practice of Medicine, based upon what are deemed correct Physiological and Pathological Principles. Part VI. Guide for Women, containing a simplified treatise on Childbirth, with a description of the Diseases peculiar to Females and Infants.

BY MORRIS MATTSON,

PHYSICIAN TO THE REFORMED BOSTON DISPENSARY, LECTURER ON PHYSIOLOGY, THE PRACTICE OF MEDICINE, ETC. ETC.

Do not counteract the living principle.—*Napoleon.*

"It is contrary to the dictates of common sense, to suppose that a POISON, either *mineral* or *vegetable*, can be a MEDICINE."

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PART SIXTH.

GUIDE FOR WOMEN.

MENSTRUATION, AND FEMALE COMPLAINTS.

MENSTRUATION.

2484. Menstruation is the discharge of a fluid from the womb resembling blood, which takes place monthly, and continues until forty five or fifty years of age, unless suspended by pregnancy, or disease. It commences at the period of life termed puberty, which, in the United States is about the age of fourteen; but in other countries, where the climate is different, it varies considerably from this standard. In some parts of India, for example, females become mothers at from ten to twelve years of age, and cease to menstruate at from twenty five to thirty; while in the high northern regions, as Iceland, twenty five is the average age at which they begin to menstruate.

2485. The first menstrual discharge is usually destitute of color, and makes its appearance sometimes without indisposition, but is usually preceded by headach, feverishness, and pains in the back, breasts, and lower extremities. After this, it returns at uncertain periods, until its regular monthly evacuations are established. The continuance of the discharge varies from a few hours to a week or fortnight, but the usual period in this country is three or four days. The quantity is generally five or six ounces.

2486. A female does not conceive until after she has menstruated. Some women do not menstruate at all, and are barren.

2487. With a few exceptions, the menstrual discharge ceases in pregnancy, nor does it generally appear during the nursing period, unless the child remains at the breast an unusual length of time.

2488. The final cessation of the menses is called the *turn of life*, or the *critical period of life*, and generally takes place in this climate between forty five and fifty years of age. There are some curious exceptions to this rule, however, for women have been known to menstruate at a very advanced period of life. Dr. Williams, in a letter published in the Boston Medical and Surgical Journal, speaks of a lady residing in Northfield, Mass., who began to menstruate a second time at ninety eight years of age. Similar instances are mentioned by Haller and Rush. The celebrated Madame de Stael furnishes an example of a woman menstruating after the age of sixty.

2489. When menstruation is about to decline, the discharge is sometimes scanty and colorless, and at others profuse and exhausting; but it generally returns at irregular periods, and diminishes gradually in quantity until it finally disappears. The breasts diminish in size at this period, and the woman becomes incapable of bearing children. In many instances, the health remains good, notwithstanding this change in life, but in others there are attacks of fever, headach, eruptions of the skin, shooting pains in various parts of the body, and other unfavorable symptoms.

RETENTION OF THE MENSES.*

2490. The non-appearance of the monthly evacuation at the natural period, is called *retention of the menses*, and is followed sooner or later by serious ill health. Among the symptoms which characterize the malady, are debility; great disorder of the stomach and bowels; sallow countenance; pains in the back and loins; swelling of the ankles at night, and of the face in the morning; palpitation of the heart; hurried, or laborious breathing; disturbed sleep; colorless urine; derangement of the nervous system; and sometimes a harassing cough. The skin is pale and cold, and in some instances acquires a greenish tinge, which has given to the disease the name of *green sickness*. The blood, says Dr. Gooch, has been found to be of a pale red color, and watery, like the juice of a cherry. The malady not unfrequently termi-

* Chlorosis.

nates in dropsy, or consumption. Females are most subject to it who live an idle and luxurious life, and do not enjoy the advantages of exercise in the open air. Hence it is far more prevalent in cities than in the country.

2491. TREATMENT. In an obstinate case, a few courses of medicine should be administered, repeating them once or twice a week, until the disease is removed. Between the courses, free use should be made of the usual stimulants and tonics, such as composition, cayenne, and spiced bitters, to keep up an action in the system, and invigorate the digestive organs. Pennyroyal tea, containing a small portion of cayenne, may be employed advantageously as a drink. The alterative mixture will be found an efficacious medicine. If the bowels are costive, half a tea-spoonful or more of cayenne, mixed with molasses, may be taken three times a day. If the nervous system is in a deranged or irritable condition, the nervine tea should be employed. (1514.)

2492. Injections into the rectum every night and morning, will accomplish much in procuring a flow of the menses, as they exercise a highly salutary influence over the uterine organs. They may be prepared as directed in paragraph 1567. Injections into the vagina are also serviceable, and may be employed two or three times a day, administering them with an appropriate syringe. (1578.) They may be prepared as any other injection; or may consist of composition tea; or a tea of bayberry, with a tea-spoonful or more of rheumatic drops; or of an infusion of catnip, summer savory, fleabane, yarrow, or any other of the stimulating herbs.

2493. Another important remedy in promoting the menstrual discharge, is the *hip bath*, which consists of the application of vapor to the hips and lower extremities. To accomplish this, a blanket is fastened around the waist, which hangs in folds upon the floor, and the vapor is introduced beneath the folds as directed in paragraph 1497, or 1501. The bath may be continued for an hour, or more, and repeated every day between the courses of medicine.

2494. The patient should keep her feet warm and dry, and avoid exposure to a cold or damp atmosphere. If the weather is mild, exercise in the open air will be beneficial. The skin should be rubbed night and morning with a coarse towel, or flesh brush, until it is in a glow. The food should be light and nourishing, avoiding the use of tea, coffee, fat meat, and all oily substances. (See remarks on diet, 1680, *et seq.*)

SUPPRESSION OF THE MENSES.*

2495. Apart from pregnancy, the menses are frequently interrupted by exposure to cold, mental agitation, and other causes which derange the health. The discharge is sometimes suddenly checked by remaining in a damp place until the body is chilled, and in that case there is usually headach, a dry and hot skin, thirst, tenderness in the region of the womb, and pains of the back and lower extremities. Sometimes the patient is attacked with shiverings. If the suppression continues beyond two or three periods, the health becomes more or less impaired, as in retention of the menses; and hemorrhage from the lungs, or some other organ, is liable to occur.

2496. TREATMENT. If the suppression is owing to a sudden cold, a cure may be effected by taking composition until perspiration ensues, and if the patient is in bed, a heated stone wrapped in a damp cloth, may be placed at her feet. If she perspires with difficulty, an injection should be administered, followed by the vapor bath, and if necessary, an emetic of lobelia to cleanse the stomach. If the disease is obstinate, or of long standing, the treatment directed for retention of the menses will be equally applicable in this.

PAINFUL MENSTRUATION.†

2497. This complaint is often caused by cold, and is liable to occur after abortion, particularly if the woman be of a nervous or irritable temperament. It is more frequent in cities than in the country, and is principally confined to those who take but little exercise, or are indolent or luxurious in their habits. The discharge is scanty at first, and accompanied with grinding or bearing down pains, which are often more severe than those of labor. Pains also occur in the back, loins, and breasts, with headach, fever, and tenderness in the region of the womb. As the discharge increases, these symptoms gradually abate, until finally they disappear altogether. False membrane, and little flakes or masses resembling clots of blood, are frequently discharged from the womb, and are followed by partial, if not entire relief. Instead of feverish symptoms, the patient is sometimes attacked with chilliness. The stomach and bowels are always more or less

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* Amenorrhœa. † Dysmenorrhœa.

deranged. The discharge, though deficient at first, may become so profuse as to cause considerable debility.

2498. A woman laboring under this complaint, very rarely conceives.

2499. TREATMENT. The most effectual means of curing painful menstruation, is by the administration of a few courses of medicine, repeating them at proper intervals, and adopting appropriate intermediate treatment. (1660, *et seq.*) Exercise in the open air, friction of the surface night and morning with a flesh brush, or coarse towel, and a plain, wholesome, and nourishing diet, using the precaution not to overload the stomach, or eat at irregular hours, will each have an influence in improving the health, and strengthening the constitution.

2500. When the menses are about to appear, or after the painful discharge has commenced, relief may be obtained by taking composition, or cayenne and bayberry, to produce a perspiration, aided, if necessary, with the vapor bath; or if the patient is in bed, heated stones wrapped in damp cloths may be placed at her feet and sides. The stimulating tea will answer an excellent purpose in allaying the pains, and quieting the nervous system, if that should be in a state of irritability. Injections into the rectum and vagina, as directed in paragraph 2492, will be found highly serviceable. With regard to the latter, an infusion of yarrow may be employed with great advantage. If severe pain is experienced in the region of the womb, a flannel wrung out of hot rheumatic drops, or vinegar and cayenne, (1531) may be laid over the affected part.

2501. The female restorative should be taken two or three times a day between the menstrual periods, particularly if the appetite is impaired; and if the circulation is feeble, or the patient complains of chilliness, it may be combined with a portion of cayenne.

2502. The unbolted wheat bread should constitute a part of the diet, as it will serve to regulate the bowels.

2503. Painful menstruation frequently disappears after marriage.

PROFUSE MENSTRUATION.*

2504. We have seen that the amount of fluid discharged at each menstrual period, is generally five or six ounces, but in an

* Menorrhagia.

unhealthy state of the system, the quantity may be increased to such an extent as to occasion extreme debility.

2505. There are two classes of females, says Dr. Gooch, who are peculiarly disposed to this complaint. In the robust and plethoric, it is characterized by inflammatory symptoms, as permanent pain, sense of fulness, weight, and tenderness in the region of the womb, together with a hot skin, and a full, hard, febrile pulse. In the other class, it is without pain in the region of the womb, and accompanied by a pale countenance, languid circulation, and a small weak pulse. Dr. Gooch designates the latter as the chronic form of the malady.

2506. If the discharge is long continued, extreme debility ensues, with headach, giddiness, noise in the ears, feeble pulse, pale, or cadaverous countenance, chilliness, cold hands and feet, and a tendency oftentimes to dropsy.

2507. The discharge may be profuse, and of short duration; or it may continue moderately for ten or twelve days, gradually exhausting the patient; or it may return every two or three weeks, instead of at the established monthly periods. In either case, the loss of blood proves highly injurious to the constitution.

2508. The complaint is caused by unwholesome food, impure air, want of exercise, intemperance in eating and drinking, and too much sexual intercourse. It often follows abortion.

2509. In the practice of the old school physicians, these irregular discharges not unfrequently continue for years, until at last the patient sinks into the welcome embrace of death.

2510. Treatment. The undue determination of blood to the womb must be counteracted by treatment which will restore a balance to the circulation. If the discharge is moderate, it may be checked by taking composition, or cayenne and bayberry, until perspiration ensues; but if it is copious, or has continued for a considerable time, it will be necessary to administer a full course of medicine, as in any other dangerous or obstinate hemorrhage. Injections per anum are of great value in equalizing the circulation. After the urgent symptoms are subdued, the female restorative, together with cayenne, or composition, may be employed to invigorate the digestive organs, and strengthen the general system.

2511. Filling the vagina with ice to stop the flow of blood, as is practised by the diplomatised physicians, is replete with danger, and should never be attempted. It weakens the blood-vessels with which it comes in contact, and consequently, as soon as the ice is removed, the blood flows into them in an increased quantity, and increases rather than diminishes the hemorrhage. The

author of the London Practice of Midwifery acknowledges that ice has been in the vagina all day without doing any *good*; and it is to be presumed he would be equally willing to acknowledge that it has sometimes done an infinite deal of *harm*.

FLUOR ALBUS OR WHITES.*

2512. Fluor albus consists of a discharge from the vagina of a white or milky color. It is most common among married women, especially if they have frequently miscarried, and occurs during pregnancy, as well as at other periods. Women of a delicate constitution, who have removed from a cold to a warm climate, are said to be particularly liable to its attacks. As the disease advances, the discharge assumes a yellow, green, or brownish color, becoming more or less offensive, and occasionally it is so acrimonious, that the wife communicates a similar disorder to her husband. (2025.) The complaint is sometimes merely local, and at others constitutional symptoms arise, such as loss of appetite, costiveness, depression of spirits, pains in the back and loins, paleness of the countenance, diminution of strength, chilliness, and a burning sensation in passing water.

2513. Fluor albus is caused by unwholesome diet, strong tea and coffee, the frequent use of purgatives, the irritation of pessaries, injuries inflicted by instruments during childbirth, and too frequent indulgence in sexual communication.

2514. TREATMENT. Injections into the vagina two or three times a day are of primary importance, particularly if the discharge is acrid or offensive. (2492.) They should be employed about milk warm. I have frequently prescribed an infusion of yarrow for this purpose, and, as I have thought, with particular advantage.

2515. If the appetite is impaired, a dose of spiced bitters may be taken before each meal, and if the patient complains of chilliness, or pains in the back and loins, composition may be used occasionally through the day, and also at night on retiring to bed, placing a heated stone wrapped in a damp cloth at the feet.

2516. If costiveness prevails, it is to be removed as directed under that head, (1896, *et seq.*) remembering that the bowels should be evacuated once or twice daily.

2517. The female restorative is a useful medicine in this complaint, and may be employed to strengthen the digestive organs, instead of the spiced bitters.

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* Leucorrhœa.

2518. Where there is scalding of urine, an infusion of cleavers, cool wort, or some other appropriate diuretic, will afford relief.

2519. If the disease is obstinate, a few courses of medicine should be given, repeating them once a week, or oftener, until a cure is effected.

FALLING OF THE WOMB.*

2520. This arises from a relaxed or debiliated condition of the vagina, which allows the womb or uterus to descend by the force of gravity. It occurs both in married and unmarried females, but is most common soon after childbirth, because the womb at that period is large and heavy, and the parts by which it is supported are feeble and relaxed. Sometimes the organ descends only a short distance into the vagina, accompanied with a sensation of fulness and bearing down; and at others it protrudes beyond the external organs, forming, in some instances, a large tumor or bag. The patient complains of dragging pains in the lower part of the back, uneasiness about the hips, and severe pains also in the thighs and groins. The whole system is more or less affected, and a train of nervous symptoms ensue. The pains are increased by walking, but after remaining for some time in bed, or in a horizontal position, they partially or wholly subside. A discharge resembling that in fluor albus is commonly present, and sometimes it is very copious. A difficulty is experienced in passing urine and feces, because the womb presses both upon the rectum and neck of the bladder, between which it is situated like a wedge.

2521. Treatment. In addition to courses of medicine, which must be repeated according to the degree and urgency of the symptoms, injections per vaginam should be employed several times a day. (2492.) These will remove the acrid or offensive matter, allay the pain, and impart tone and vigor to the debilitated parts. They should consist of a tea of bayberry, pond lily, witch hazel, or some other prominent astringent, adding a portion of rheumatic drops. Between the courses, an injection should be administered once a day to evacuate the bowels, provided costiveness prevails,

* Prolapsus uteri, or procidentia uteri. By prolapsus, says Denman, is meant a descent of the uterus into the vagina, lower than its natural situation, but when it protrudes beyond the external organs of generation, it is then called procidentia.

and cayenne, composition, and the female restorative employed according to circumstances, to keep up a healthy action in the system, and promote appetite and digestion. I am in the habit of prescribing the alterative mixture, which I have found to be very useful in this complaint, particularly where the stomach is much deranged, or the food occasions distress. If the patient suffers severe pain, she should be kept in a gentle perspiration with the stimulating tea, which is particularly serviceable where there is much irritability of the nervous system.

2522. Pessaries are frequently used as a mechanical support for the womb, but they appear to do more harm than good.* They not only irritate the parts with which they are in contact, and occasion an offensive discharge, but by keeping up a constant distention, they increase the debility of the vagina, and thereby aggravate and prolong the malady.

2523. "A lady who suffered from procidentia uteri," says the author of the Practical Compendium of Midwifery, "devised a pessary for herself, which was thus made. Melt four ounces of beeswax, together with a piece of mutton suet the size of a walnut, and pour it into a box of the requisite size, which has a pillar in its centre; turn it out when cold, and you have a thin cake with a hole in the middle. Thus a pessary is formed, which the lady herself has found a very effectual one, and it has also afforded relief to many poor women whom she has supplied with it. The pessary should be taken out every night. The circular hole should not be very large, lest the neck of the womb should descend into it and become strangulated; yet it must be so large as to admit the passage of the menstrual fluid."

2524. Whether this form of pessary is preferable to those made of wood, or metal, I am not prepared to say, but women suffering with displacement of the womb, may make a trial of it for themselves. The organ should be returned as nearly as possible to its original position, and the pessary introduced gently into the vagina, so that the mouth of the womb may rest upon its upper surface. The great objection to the wax, as well as other similar pessaries, however, is, that if they are not so large as to be introduced with some difficulty, they are liable to drop out, and hence injure the vagina by the distention which they occasion.

2525. A pessary prepared as follows, I have recommended in several instances with decided advantage. Take a piece of sponge the size and shape of an egg, and enclose it in a bag made of silk, or very fine linen, introducing between it and the sponge a layer

* Pessaries generally consist of a piece of flat, circular wood, with a hole in the centre. They are sometimes made of ivory, metal, or India rubber.

of pulverized bayberry and poplar bark, in the proportion of two thirds of the former, to one third of the latter, and moisten the bag with port wine, a decoction of bayberry, or a solution of rheumatic drops, as strong as it can be borne. The bag is to be introduced into the vagina after the manner of a pessary, and when it is ultimately adjusted, the ends should be from side to side of the patient. It affords a soft and easy cushion for the womb; and the vagina, instead of being rigidly distended, as is the case with the common pessary, gradually contracts upon the bag, and soon acquires sufficient tone or strength to maintain the uterus in its place. A piece of tape should be attached to the bag, so that it may be withdrawn occasionally, in order that the vagina may be cleansed with injections, as already recommended. It need not be worn at night, and when it becomes offensive, a new one is to be substituted, remembering that as the vagina contracts, each successive bag is to be diminished in size.

2526. If the womb protrudes beyond the external organs, and is swelled and inflamed, it cannot be returned into the vagina until the swelling and inflammation are subdued, and to accomplish this, a thorough course of medicine should be administered. The displaced organ should then be washed with a warm infusion of raspberry, witch hazel, or sumach leaves, and returned in a gentle manner with the fingers, previously smearing them with sweet oil, lard, or what is preferable, the mucilage of slippery elm. The descent of the womb is now to be prevented by mechanical means, as recommended in the preceding paragraph, and astringent injections should be employed several times a day to aid the contraction of the vagina. It is important, also, that the body should be as much as possible in a horizontal posture, as long as there is any tendency of the uterus to escape from its natural position.

2527. Where the womb has been displaced so long that a cure is out of the question, the patient may pass through life very comfortably by regulating her diet, (1680, *et seq.*) and using appropriate medicines, when they are required, to strengthen and invigorate the system. A lady of Boston consulted me some months ago, with prolapsus uteri, who, after suffering indescribable tortures for many years under treatment by the medical faculty, was given up to die at the Massachusetts General Hospital, and yet, by the administration of a few courses of medicine, and proper intermediate treatment, she has been enabled to superintend her household affairs, and travel a long distance every Sabbath to church. The uterus, I may add, has descended to within one inch of the external organs.

2528. Pregnancy is sometimes a means of curing this malady.

During the third month of gestation, the womb ascends spontaneously from the pelvis into the cavity of the abdomen, and if proper care be taken after delivery, a cure may be effected. The body must be kept in a horizontal posture, until the uterus has returned to its natural dimensions, and astringent injections frequently employed, as recommended heretofore.

2529. "The imperfect procidentia uteri is often overlooked," says Dr. Gooch, "and the case treated merely as a stomach complaint. Two very eminent physicians were consulted by a lady; they treated her as one of disordered stomach; after a lapse of time, another physician was consulted, who, from the uneasy sensation and weight experienced about the pelvis, in conjunction with other symptoms, concluded that there might be an imperfect procidentia uteri. He examined, and found it to be so. He returned the uterus, and introduced a globular pessary, after which the stomach complaint ceased in about a week. The physicians who were first consulted were both men of ability, (!) and of high rank in their profession; but they declared that they never heard of a procidentia uteri, in which the organ did not protrude externally!"*

POLYPUS.

2530. This is a tumor or excrescence which grows from some part of the womb, or vagina, supported generally by a very narrow neck, although, in some instances, it is broad and flat at the base. If very large, it produces many unpleasant as well as unfavorable symptoms, such as bearing down pains, copious bleeding, difficulty in passing urine and feces, and acrid or offensive discharges from the vagina. The hemorrhage is increased at each menstrual period, and finally the patient sinks into a state of great debility or exhaustion. The excrescence frequently originates within the cavity of the womb, and gradually descends into the vagina. The neck is sometimes so slight that it may be separated with but little hemorrhage. The tumor may enlarge so as to protrude beyond the external organs of generation, and in that case might be mistaken for the uterus, only that it possesses but a limited share of sensibility.

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* The reader is referred to the note at bottom of page 604 for an explanation of the term *procidentia uteri*, as given by Dr. Denman, an English writer of eminence, whose work on obstetrics is received by the medical profession as standard authority, both in England and the United States.

2531. TREATMENT. A polypus may be removed in a week or ten days by passing a ligature around its neck, so as to cut off the supply of blood by which it is nourished. The operation is attended with but little pain. At first the polypus swells, but it soon begins to soften and diminish in size. The ligature or thread should be drawn gently at first, and tightened every two or three days until the tumor separates. There is always an offensive discharge, which should be removed by injections into the vagina. (2492.)

2532. The tumor decomposes in some instances, instead of coming away in a mass, and in such case the discharge is extremely fetid. A polypus thus removed does not grow again, unless it happens to be of a malignant character. There may be a difficulty sometimes, from the situation of the excrescence, in securing it with a ligature, and when this occurs, the thread must be passed around it with some convenient instrument. Care must be taken not to enclose any of the living parts with the excrescence, or it will produce excessive pain, and seriously injure, if not destroy the patient.

2533. "Dr. Hunter," says Dr. Gooch, "applied a ligature to a polypus, and drew it tight; violent pain was produced; he slackened it, the pain ceased; he pulled it again, and agonizing pain was occasioned; he told the patient she must bear it; he gave her an opiate, and thus left her. The next day he found her with a thready and almost imperceptible pulse, bathed in cold sweats, with a cadaverous countenance. She soon died; and he found on examination, that he had included a portion of the womb in the ligature."

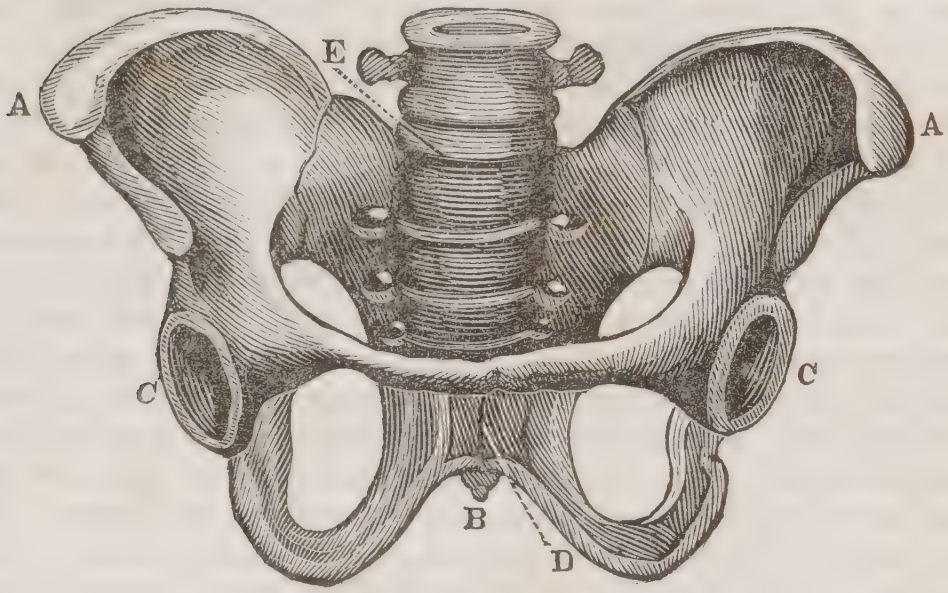
PARTS CONCERNED IN GENERATION.

PELVIS OR BASIN.

2534. The pelvis is a bony structure or cavity at the lower part of the abdomen, forming the base of the spine, and is so named from a Greek word signifying basin, because it is shaped like a basin used in former times.

2535. The accompanying figure will give some idea of its formation. The prominences at A, A, may be felt at the right

Fig. 9.



Adult Female Pelvis.

and left sides of the abdomen, about three inches above the bend of the thigh, constituting portions of the *hip bones.* The termination of the spine, which consists of a small moveable bone, is seen at B, and may be felt an inch or an inch and a half behind the anus. It is pushed back in time of labor by the head of the child, which increases the diameter of the pelvis from before backward, and facilitates the progress of delivery. C, C, are the cup-like cavities or sockets which receive the heads of the thigh bones. D, is the pubis or front bone, which is placed at the upper and fore part of the pelvis, just above the external organs of generation. It consists, in fact, of two bones, which meet at D, and are united to each other by a very strong cartilage, and otherwise secured by ligaments. An opinion is entertained by some people, who know nothing of the anatomy of the human frame, that these bones separate during labor, but nature has bound them together so firmly as to prevent the possibility of such an occurrence. In a diseased or morbid condition of the bones, however, a separation has been known to take place, but the accident is a serious one, and in some instances disables the woman for life.

2536. The pelvis contains the bladder, rectum, and womb. The first of these organs is situated just behind the pubis, the second is in contact with the spine, on the opposite side, and be-

tween these we have the uterus or womb. Above the brim or edge of the pelvis, of which the top of the pubis forms a part, the intestines, and other organs of the abdomen are situated.

2537. With regard to the diameters of the pelvis, it will be seen that the distance from side to side is greater than from the top of the pubis to the spine, as designated at the letter E. The diameters are reversed, however, at the outlet of the passage, the *shortest* one being from side to side, and the *longest* from before backward, measuring from the lower edge or arch of the pubis, to the termination of the spine, as figured at B. In all easy and natural labors, therefore, the head of the child, which measures more from the forehead to the crown, than from one side to the other, must be accommodated to these diameters, and such a provision nature has actually made, for as the head enters the cavity of the pelvis at its brim, the face is either to the right or left side of the mother, but as it descends in the passage, and approaches the outlet, the face turns either to the arch of the pubis, or the spine or back bone, but generally to the latter. In the process of delivery, therefore, the head moves in a curved direction, sliding backward, in the first instance, towards the spine, and then moving forwards in the direction of the outlet.

2538. The short diameter of the pelvis is estimated at about four inches, and the long diameter at five inches; while the short diameter of the child's head is three inches, and the long one four inches; so that in ordinary cases, labor is accomplished with perfect ease. A diminution in the size of the pelvis, however, or an increase in the size of the head, will have some influence on the result, though the rule which medical men have endeavored to establish, that "a child at full time cannot pass when the short diameter of the pelvis is less than two inches and a half," appears to be without foundation. Baudelocque, the distinguished French accoucheur, says, "A few years ago, I preserved a woman from the Cæsarean operation,* the diameter of whose pelvis had been estimated at only *one inch and a quarter* by her physician; we waited four hours for the favorable moment to operate; the apparatus was prepared; the woman was ready to place herself on the couch; twelve or fifteen persons, as well physicians as surgeons, were going to be witnesses of this afflicting scene; when touching the woman for the first time, I declared strenuously that she would be delivered naturally, and without difficulty; as actually happened two hours afterwards, and the child was strong and healthy."

* Cutting through the abdomen into the uterus, and extracting the child. The operation is so called because Julius Cæsar is said to have been extracted in this manner.

2539. The bones of a child's head are soft and yielding at the time of birth, and capable of great compression, so that delivery may take place although the head is larger than the cavity of the pelvis. Such was undoubtedly the case in the instance mentioned by Baudelocque.

2540. Labors are sometimes rendered tedious by deformity of the pelvis, which is produced by the rickets during childhood, (2237, *et seq.*) or which may occur in adult age from the softening of the bones. The pelvis may be so much distorted, as to render delivery impossible, but this is a rare occurrence; and where there is extensive deformity, the female is generally aware of the fact, or at least has every reason to suspect it, and will therefore prudently refrain from matrimony. It often happens, however, that a woman is deformed in the back and limbs, and yet is perfect with regard to the pelvis, so that this should be taken into the account when a question arises as to the propriety of entering the married state.

EXTERNAL PARTS OF GENERATION.

2541. These, in the language of anatomists, are the mons veneris; the labia or lips; the nymphæ; the clitoris; the meatus urinarius, and urethra; the perineum; and, when it exists, the hymen.

2542. *Mons Veneris.* This is the prominence over the pubis.

2543. *Labia.* These are two in number, uniting in an angle below the mons veneris, and running towards the anus, near which they terminate in a second or lower angle. They are subject to inflammation and enlargements.

2544. *Nymphæ.* The nymphæ are small folds of skin, of a vermilion red, situated within the superior half of the labia, forming a junction near their upper angle. They are very large at birth, but of a moderate size in the adult. They serve to direct the water downward, and are called the *internal labia.* In some subjects, they enlarge to such an extent as to become a source of inconvenience. If they adhere in consequence of inflammation, they may be separated by gradual pressure with the thumbs, after which they should be kept apart with a fold of linen, moistened with sweet oil, or nerve ointment, until they are healed.

2545. *Clitoris.* This is a small body within the nymphæ, similar in structure to the male penis. In some instances it has acquired the size of the penis, and hence the term *hermaphrodite.*

2546. *Meatus urinarius, and urethra.* The meatus urinarius

is the opening of the urethra, consisting of a little bulb or elevation, and is situated within the nymphæ at the entrance of the vagina—that is, if a female were to pass her finger downward between the nymphæ or internal labia, it would strike upon the meatus urinarius just before entering the vagina. A knowledge of this part is important, in case it becomes necessary to use the catheter. The urethra is the canal leading from the meatus urinarius into the bladder, and is an inch or an inch and a half long. During the latter months of pregnancy, it rises almost perpendicularly behind the pubis or front bone, but at other periods, when the bladder is in its natural position, its direction is obliquely backwards.

2547. *Perineum.* The perineum is the space between the lower angle of the labia and the anus, and varies in extent in different females, but is usually about two fingers in breadth. In the old school practice of midwifery, where every thing is accomplished by force, instead of waiting for the quiet operations of nature, it is frequently torn or lacerated by the head of the child, particularly during a first confinement.

2548. *Hymen.* The hymen is a fold of membrane which forms a line of separation between the external and internal parts of generation, being situated at the mouth of the vagina, just behind the meatus urinarius. It is generally ruptured at the first connexion between the sexes, though, in a few instances, it is so thick and strong as to prevent all sexual intercourse. When there is an opening through it, however small, the menses are allowed to escape, so that the female experiences no difficulty on this account, but if the membrane is entire, thereby sealing up the vagina, the menses collect from time to time, ultimately producing an enlargement of the abdomen, resembling pregnancy. Dr. Denman was called to a young woman under such circumstances, who was suspected to be pregnant, though she asserted to the contrary, and had never menstruated. On examination, it was found that the hymen was entire. An incision was made through it, and four pounds of blood of the color and consistence of tar were discharged. The swelling of the abdomen abated, and the patient menstruated regularly after that period, without suffering any difficulty or inconvenience.

2549. It is a curious fact, related by medical writers, that women become pregnant with the hymen *entire*, so that its presence is not a decisive proof of virginity, nor should the absence of it, without other circumstances, lead to suspicions unfavorable to the unmarried female, for it may be destroyed early in life by disease, or otherwise, and is frequently wanting, says Dr. Francis of New York, in a natural and health state of the parts. In-

deed, there are some eminent writers who have denied its existence altogether.

2550. If the hymen continues entire beyond the age of puberty, when the menses are expected to flow, it should be carefully divided with a knife or lancet, to allow the menstrual fluid to escape. For this purpose it need not be laid entirely open; but to favor sexual intercourse, as in case of matrimony, two incisions should be made, one from above downward, and the other from side to side, crossing each other in the centre of the membrane. Another plan is, to cut out the hymen by a circular incision—that is, by passing the knife around the circumference of the membrane, taking care not to wound the adjacent parts. After the operation is performed, and the hemorrhage has ceased, a roll of lint moistened with nerve ointment should be introduced into the vagina, and continued there a sufficient length of time to prevent the wounded parts from adhering together.

INTERNAL PARTS OF GENERATION.

2551. These are the vagina and womb, with the appendages of the latter, which consist of the ligaments, Fallopian tubes, and ovaries.

2552. *Vagina.* The vagina is the canal which leads from the external parts of generation to the womb, and in the adult female is about two inches wide, and five or six inches long. In young females its length does not exceed three or four inches. Its upper extremity is terminated by the womb, the neck of which it encircles. Its lining membrane is thrown into folds or wrinkles, which allow of its distention in the time of labor. These folds are lessened however by frequent child-bearing. The lower part of the vagina is connected with the rectum behind, and the bladder and urethra in front.

2553. The vagina is so short, in some instances, that the mouth of the womb may be felt just within the labia, but this is a deformity which very rarely occurs. "There is no remedy for this malformation," says Dr. Gooch, "and the female who is the subject of it must be an unhappy companion for life. Dr. Hunter was consulted by a lady in a mask, who had a short vagina. He told her she was the most unfortunate wife a man could have, there being no cure for her."

2554. The vagina, continues the same writer, may be of the proper length, and yet "so small as scarcely to admit a goose quill. The consequences of this contraction are similar to those of the unyielding hymen. In this dilemma a medical man is con-

sulted. Inflammation has perhaps been produced in the vagina, by the efforts to overcome the obstruction; there is a burning sensation in the vagina, accompanied by a discharge, and the bride and her relatives think that her husband has communicated to her some disease. On examination, it is found that the contracted portion of the vagina will not admit the finger. The difficulty is to be overcome by dilating the canal with bougies,* introducing one previously oiled, which passes with some difficulty. Do this at bed time, and the next morning enquire if it produces pain; if not, let it remain twenty four hours. If however it produces much pain, you must remove it, and introduce a smaller one. At the end of twenty four hours, withdraw the first bougie, and pass up a second of a larger size; and thus proceed until the vagina is sufficiently dilated. Before the bougies are introduced, you must reduce the inflammation which may have been previously excited."

2555. *Womb.* The womb, as we have already seen, is at the top of the vagina, between the bladder and rectum. Its shape has been compared to that of a compressed or flattened pear; and for the sake of convenience, it has been divided into three parts, the fundus, the body, and the cervix or neck. The upper part is called the fundus, the lower the cervix or neck, and the intermediate portion the body. The womb is about three inches long. Its width, at the neck, is one inch, and at the fundus two inches. Its cavity is small, and scarcely large enough to admit a bean, or an almond. The neck, which protrudes into the vagina, is usually half an inch long. The organ is plentifully supplied with nerves, and hence the intimate sympathy which exists between that and the stomach, breasts, and other parts of the body, when it is in a morbid or diseased condition. Small as are its dimensions in the natural state, it increases to a wonderful size during pregnancy, measuring twelve inches or more in length, at the full term, and nine inches from side to side at the fundus. It also preserves its thickness. The cavity, which was only large enough to hold an almond, now contains the child, invested in its membranes, which, of themselves, form a large mass, and two or three quarts of fluid termed the *waters* or *liquor amnii*.

2556. After delivery, the womb is two or three weeks in returning to its natural size, and if there is much debility of the parts, it may descend into the vagina, as already stated, constituting prolapsus or falling of the womb.

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* A bougie is an instrument made of India rubber, which surgeons introduce into the urethra, œsophagus, and rectum. It is round, pliable, and of various sizes, according to the purpose for which it is to be used.

2557. Until the third month of pregnancy the womb remains within the pelvis, but after that period, it ascends into the cavity of the abdomen.

2558. *Appendages.* Broad ligaments or folds of membrane are given off from the fundus of the womb, at its sides, which confine the organ within the pelvis. The Fallopian tubes are enclosed in the upper edge of the broad ligaments, and are three or four inches long, terminating in fringe-like extremities, which float loosely in the pelvis. They open into the womb by extremely minute orifices. The ovaries are also situated in the broad ligaments, one in each, being below the Fallopian tubes, and about an inch from the womb. They are described as whitish bodies, resembling a large bean in size and figure. Animals deprived of them cease to bring forth young. It is supposed that they contain the embryo or germ of life, in the form of an egg, which is carried from the ovary by the Fallopian tube at the period of conception, and deposited in the womb, where it is gradually quickened into life. What influence the semen of the male exercises over this mysterious process is not known, excepting that without it, impregnation could not take place.

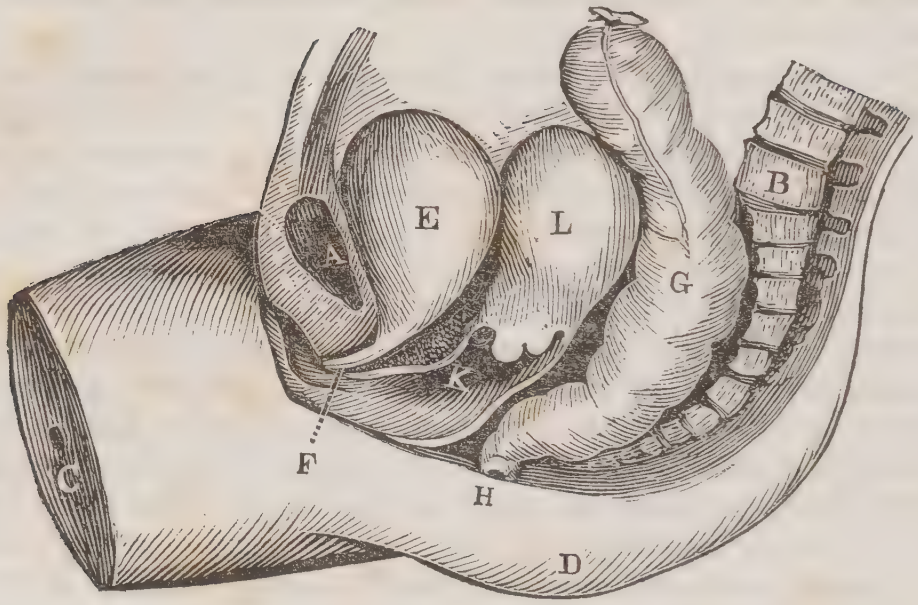
2559. The ovaries, though small in their natural state, are sometimes distended with fluid to an extraordinary degree, constituting what is termed *ovarian dropsy.* A small tumor is at first discovered on one side of the abdomen, which gradually extends to the whole of the abdominal cavity. "The patient keeps upon her feet, and looks healthy at first, but the constitution begins at length to suffer, the abdomen becomes more distended, the patient loses flesh, emaciation ensues, and death finally takes place." The disease is to be treated by courses of medicine; and the abdomen should be frequently rubbed with the stimulating liniment.

2560. Below the Fallopian tubes, the round ligaments, as they are termed, are given off, which pass out of the pelvis, and are distributed to the groin, mons veneris, and neighboring parts. This will explain the cause of severe pain being felt in these regions, when the womb is diseased.

PARTS WITHIN THE PELVIS.

2561. The pelvis contains the bladder, womb, vagina, and rectum, as we have seen; and in order to show how these parts are connected, I have procured the following imperfect wood-cut illustration, which represents a vertical division of the pelvis from before backwards, cutting through the middle of the vagina, but leaving the bladder and rectum entire.

FIG. 10.



View of the organs within the Pelvis.

A, the pubis or front bone, at the point of division; B, the spine or back bone cut directly down; C, portion of the right thigh; D, the right buttock; E, the bladder partly distended with urine, rising behind the pubis; F, the urethra or canal leading into the bladder; G, the rectum; H, the anus; K, the vagina; L, the womb, with its mouth projecting into the vagina.

2562. By reference to the cut, it will be seen how *falling of the womb* produces bearing down pains, and interferes with the discharge of the urine and feces. Attention to the connexion of the parts, also, will explain the nature of what is termed *retroversion of the womb*, which will be treated of hereafter.

PREGNANCY, AND ITS DISEASES.

SIGNS OF PREGNANCY.

2563. Suspension of the menses is one of the first signs of pregnancy, but is not to be relied upon, for it may be produced by other causes than the pregnant condition; and on the other

hand, a woman may become pregnant, and have a continuance of the menstrual discharge for two or three months, or perhaps for the whole term.

2564. Morning sickness often occurs soon after pregnancy, accompanied with heartburn, costiveness, and other symptoms indicating a disordered state of the stomach and bowels.

2565. In three or four months the breasts begin to swell, and are affected with shooting or darting pains. The circle around the nipple changes to a deeper hue, and the skin within this circumference is rougher than ordinary.

2566. After the third month, the womb rises out of the pelvis, followed by an enlargement of the abdomen, just above the pubis. The motion of the child is then felt, which is termed *quickening*. This is regarded as one of the more infallible signs of pregnancy, but is also liable to deceive, for a similar sensation may be produced by an accumulation of wind in the bowels. The ascent of the womb into the abdomen is sometimes so sudden that the woman faints. The usual period of quickening is the sixteenth week. Some women, however, do not feel the motion of the child until the sixth or seventh month; and others do not experience any sensation of the kind during the whole term of pregnancy.

2567. By the expiration of six months, the fundus of the womb is found as high as the navel, which, instead of being depressed, is now raised to a level with the skin, or is perhaps protruded, in consequence of the pressure from within. This, I may add, is considered an unerring sign of pregnancy. The abdomen, moreover, at its most prominent part, is firm and hard to the touch, which is not the case in dropsy, and some other enlargements. The motion of the child may also be felt at this period, if the hand be placed on the abdomen, and continued with a gentle pressure for a few minutes, especially if it be previously dipped into cold water. This motion is sometimes feeble, and at others violent.

2568. During the eighth month, the fundus of the womb occupies the region of the stomach; but towards the close of the ninth month, it gradually subsides, until it is nearly on a level with the navel.

2569. The predictions in regard to pregnancy, however, are often uncertain, and those who pretend to be best acquainted with the subject, often make the most deplorable blunders. Professor Dewees, in his edition of Baudelocque, says—"I was several times in consultation concerning a woman, whose pregnancy appeared to be doubtful to her till the last moment, as well as to the physician who had the care of her health, because the motions of

the child could not in any way be perceived, and nothing we could do, even at eight months and a half, could excite them; the child, which was as strong as usual, was nevertheless born healthy."

2570. Professor Channing of Harvard University, mentioned the following ludicrous circumstance in one of his lectures. "A few years ago," said he, "there was a young woman at the Massachusetts General Hospital with all the symptoms of dropsy. She bore a good character, was of a religious turn of mind, and was not suspected, therefore, of any improper conduct. She was treated with digitalis, blood-letting, and all the remedies (!) for dropsy, and was at last discharged as an *incurable* patient. In a short time after this, however, I heard that she had been *put to bed with twins*. I do not know how I could have been so deceived, but such are the errors which are sometimes committed in the medical profession."

2571. Pregnancy is occasionally mistaken for dropsy of the abdomen, and the deplorable consequences which are likely to ensue from such an error, have been vividly portrayed by Dr. Denman, in his Practice of Midwifery. He says—"If any active remedies are used on the presumption of dropsy, the child will, of necessity, be often destroyed, and an abortion or premature labor occasioned; and when the operation of tapping has been performed, it has been known to prove fatal to the mother and child, always reflecting great discredit both upon the operator and profession."*

DISEASES OF PREGNANCY.

2572. It would be questioning the goodness of the Creator to suppose that pregnancy is incompatible with a healthy condition of the system, but such are the luxuries and abuses of society at the present day, that we find many unpleasant and even alarming symptoms growing out of the pregnant state. I am convinced, however, that if females would confine themselves to a simple, wholesome diet, eating moderately, avoiding excesses of every description, and exercising frequently in the open air, they would experience no derangement of health during pregnancy, and be partially if not wholly exempted from suffering in childbed.

2573. Among the prominent diseases incident to the pregnant state, are piles, heartburn, giddiness, headach, cough, diarrhœa, jaundice, toothach, fluor albus, retention of urine, hysteria, palpitation of the heart, and sometimes convulsions, all of which

* American edition of Denman, by Dr. Francis of New York. 1825.

are described under their appropriate heads, and do not require any further notice here. There are some other diseases, however, of which it may be necessary to speak rather more at length.

2574. *Sickness and Vomiting.* Sickness is a common symptom during the first few months of pregnancy. It generally occurs in the morning immediately after rising from bed, and for that reason has been termed the *morning sickness.* A dose of spiced bitters, or a tea-spoonful of rheumatic drops in a wine-glassful of warm water, sweetened, with a portion of powdered cinnamon, may be taken to advantage. If vomiting ensues, or if the stomach is very irritable, an emetic of lobelia may be administered. The patient should confine herself to very plain food, and pay attention to the *quantity* as well as the quality. (1698, *et seq.*) She should also avoid the use of tea, coffee, butter, and all oily or greasy substances, for these almost invariably produce a deranged or morbid condition of the stomach. (1689, *et seq.*) Perhaps it is rarely suspected that sexual intercourse is frequently a cause of sickness, vomiting, and other distressing symptoms during the pregnant period?

2575. *Costiveness.* This is a common attendant on pregnancy, and should never be allowed to continue for any length of time. The bowels may be kept free by regulating the diet, eating ripe fruits, and the unbolted wheat bread. If the case is obstinate, injections will be necessary, and perhaps a course of medicine. Further directions will be found under the appropriate head.

2576. *Swollen and Painful Breasts.* These should be rubbed two or three times a day with volatile liniment, or a mixture of cayenne and vinegar, (1531) covering them with flannels to keep the skin moist. The stimulating liniment is, perhaps, a still better application—at least it is highly recommended by ladies who have given it a trial. Where the pain is severe, composition should be taken internally to maintain a gentle perspiration; or if the skin is harsh and dry, the stimulating tea may be employed. Swollen breasts are signally benefited by steaming them once or twice a day for a quarter or half an hour; and for this purpose, a blanket may be thrown over the shoulders, fastened around the neck, and vapor generated by immersing heated stones in a basin of water. The patient should recline over the basin, in some convenient position, so that the vapor may come in contact with the breasts.

2577. *Swelling of the Labia.* This takes place, in some instances, to an enormous degree. Heated stones wrapped in damp cloths, should be placed at the feet and sides, and composition tea, or some similar medicine, administered freely, to keep up a perspiration. In addition to this treatment, vapor should be applied locally, as directed in paragraph 1499, and the parts bathed occasionally with nerve ointment. If suppuration ensues, poultices are to be employed, as in any other swelling accompanied by the formation of matter.

2578. *Restlessness and Want of Sleep.* The nervine tea, employed as a drink, will be found highly efficacious. The addition of a small portion of lobelia, but not enough to occasion nausea, will increase its good effects. An injection and vapor bath, on going to bed, will generally predispose the patient to sleep.

2579. *Itching.* An itching of the external parts of generation is sometimes so troublesome, that the woman is obliged to avoid society, and shut herself up in her room. The parts should be kept perfectly clean, and if the vagina is in a morbid condition, it should be cleansed with injections. (2492.) Injections per anum are also indispensable, in case the rectum is irritated by worms, or a collection of hardened feces.

2580. *Cramps and Pains.* These frequently attack the lower extremities, and pains are also experienced in the back, sides, hips, and bowels. Composition, enemas, the vapor bath, and scullcap, or some other nervine, are to be used according to the circumstances of the case. If the stomach is much disordered, an emetic will be indispensable. The part in which the pain is seated, may be rubbed with the volatile liniment, rheumatic drops, or vinegar and cayenne, (1531) and if this does not afford relief, a flannel moistened with either of these liquids may be applied. Lobelia in doses just short of producing nausea, is very efficacious in allaying cramps, and obstinate pains.

2581. *Swelling of the Legs.* This occasionally occurs, and is sometimes accompanied by enlargement of the veins. The swelling may extend to the whole body, and the woman acquire enormous dimensions, even before the sixth month of pregnancy. In these cases thorough courses of medicine are required, using cayenne, bayberry, and spiced bitters freely in the intervals. The skin should be rubbed briskly every night and morning, with a

coarse towel, or flesh brush, and every effort made to strengthen and invigorate the system. Frictions of the swollen limbs with the stimulating liniment will have a beneficial effect.

RETROVERSION OF THE WOMB.

2582. This accident generally happens between the third and fourth months of pregnancy; but it occurs sometimes soon after delivery, before the womb has had time to return to its natural size. It may also take place from enlargement of the organ by disease.

2583. The top or fundus of the womb is thrown backwards upon the rectum, while the mouth is forced against the pubis, compressing the urethra and neck of the bladder, and preventing the escape of urine. A tolerably accurate idea may be formed of the relative state of the parts by referring to Fig. 10, page 616.

2584. Retroversion of the womb is caused by falls, blows on the abdomen, straining at stool, and by neglecting to evacuate the bladder until it is over-distended with urine. The organ being thus enlarged, forces the top of the womb against the rectum, as already described. Among the symptoms which characterize the accident, are bearing down pains, uneasiness about the neck of the bladder and rectum, retention of urine and feces, and dragging pains in the groins and fore part of the thighs. If the bladder is not seasonably evacuated, it may burst, and discharge its contents into the abdomen; or it may become inflamed and speedily mortify.

2585. Treatment. There is no difficulty in restoring the womb to its natural position soon after the retroversion takes place, but if it is neglected for a week or fortnight, it is not so easily accomplished. As soon as the accident is discovered, therefore, the woman should be placed on her hands and knees, previously evacuating the bowels with injections, and a finger introduced either into the vagina between the womb and the rectum, or into the rectum itself, making gentle and continued pressure upon the displaced organ until it is restored to its natural situation. "If the uterus is once felt to move from its preternatural position, it rises easily into its appropriate place." The operation performed, the patient should remain in bed a few days, to prevent a recurrence of the accident.

2586. If retroversion takes place during pregnancy, and relief is not afforded, the difficulty is overcome as soon as the womb

ascends from the pelvis into the cavity of the abdomen, which, as we have stated, is after the third month.

2587. *Use of the Catheter.* If the mouth of the womb presses firmly upon the urethra, it is evident that the urine will be retained, and if the bladder is over-distended, it must be evacuated before any thing further can be accomplished for the relief of the patient. The pressure may sometimes be removed from the urethra by gently inserting the finger between it and the womb, thereby allowing the urine to escape, but if this cannot be effected, it will be necessary to resort to the use of a catheter, which is a small India rubber tube, slightly curved, and four or five inches long. If this is not to be obtained, a small goose quill will answer the purpose, cutting a hole in its side near the end, and another at the top of the barrel, without separating it from the feather, making every part of it perfectly smooth. This, although straight, may be readily introduced into the bladder, by a gentle motion backwards and upwards, following the course of the urethra, as delineated in the figure on page 616. Force must not be employed, lest it occasion inflammation. A little patience is all that is necessary, and the woman may either perform the operation herself, or entrust it to the hands of a female friend. Care must be taken that the catheter is of sufficient length, for the neck of the bladder is upon the stretch, and therefore longer than natural.

2588. After the bladder is emptied of its contents, the displaced womb is to be restored, as already directed; and as a general rule, the organ should be pushed toward either the right or left side of the patient, before moving it in the direction of the pnbis, for, by this precaution, we avoid the projection of the spine, as seen at E. in Fig. 9, page 609, which would be likely to interfere with the success of the operation.

2589. With regard to the introduction of the catheter, Dr. Bard very truly and emphatically observes, "From motives of delicacy alone, this easy operation ought to be in the hands of the women." Nevertheless, there are physicians who have been in the habit of visiting female patients daily, for weeks in succession, to evacuate the bladder, when the patients themselves could have accomplished it without the slightest difficulty, had they been properly instructed. Dr. Ewell, in his Family Physician, applies the lash of censure to this indelicate but fashionable practice, and asks, "What is the operation of introducing the catheter? the bladder containing the urine, is immediately behind the pubis or front bone, and the canal to it not three inches long. The instrument is adapted to the size of the canal, and the woman lying on

her back, finding the entrance into which the end of the catheter is introduced, and pushing it gently backwards and upwards, in the direction where the least resistance is made, can readily introduce it herself, to draw off the urine. If the woman be too sick to perform the operation, it can be accomplished by her associate, or nurse."

ABORTION.

2590. Most cases of abortion occur between the eighth and twelfth weeks of pregnancy, and are usually preceded by intermitting pains in the back, and lower part of the abdomen, with a sense of weight in the region of the womb. These symptoms may continue only a few days, or for several weeks. In the meantime the breasts become soft, and diminish in size, accompanied, in many instances, by sickness, vomiting, nervous, and hysterical symptoms, and a frequent desire to evacuate the bladder and rectum. A still more prominent sign of abortion, is a discharge of blood from the vagina, which, when profuse, is called *flooding*. This arises from the detachment of the placenta from the internal surface of the womb. The discharge of blood is sometimes small, and at others copious. Bearing down pains at length ensue, and the embryo child is sooner or later expelled. The pains vary in intensity, being, in some cases, as severe as those of labor, while in others they cause little or no suffering. A discharge of blood from the vagina should not necessarily create alarm, however, for it frequently takes place without being followed by abortion.

2591. Women who reside in cities, and are indolent or luxurious in their habits, keeping late hours, and frequenting crowded apartments, are far more subject to abortion than those who pass their lives in the country, enjoying the advantage of exercise in the pure, fresh air, and avoiding those excesses and improprieties which tend to impair the health, and weaken the constitution. A useful lesson might be learned, with regard to this matter, from the domestic animals, which are said to miscarry much more frequently than those existing in their native wilds.

2592. Abortion is produced by a great variety of causes, such as blows on the abdomen, dancing, jumping, straining at stool, the irritation of piles, strong mental emotion, fright, bloodletting, purgatives, long continued diarrhœa, indulgence in sexual intercourse, and the internal use of mercury, and other poisons. Women who menstruate with difficulty, and happen to conceive, are very apt to miscarry. Aloes, by irritating the rectum, and

thereby sympathetically affecting the womb, is often a cause of abortion. Indeed the whole routine of purgatives is pernicious. A writer in the Boston Medical and Surgical Journal for 1839, says he was called to a delicate married lady who had symptoms of being in labor, and in a short time was delivered of a small, feeble child, weighing about four pounds, although her time was not up by two months. Copious flooding took place after the expulsion of the placenta. The cause of the difficulty was a dose of Brandreth's pills, six in number, which the patient had taken the day previously, being somewhat costive. The pills operated violently, and the woman was tormented with a constant desire to go to stool, until the labor pains commenced.

2593. The teeth frequently ache during pregnancy without being in the least decayed, but should not be thoughtlessly extracted, for the operation has frequently proved a cause of abortion.

2594. Treatment. By the employment of suitable remedies, abortion may generally be prevented. If the symptoms are severe, a course of medicine should be administered, which will check the flooding, and quiet the irregular action of the womb. In milder cases, a tea of composition, with one or two injections per anum, will usually suffice to produce the desired effect. If the patient is in bed, heated stones wrapped in damp cloths should be placed at the feet and sides to favor perspiration. If there is much irritability of the nervous system, scullcap, or some other nervine, may be added to the composition tea.

2595. If abortion is apprehended, the woman should avoid all sexual intercourse with her husband until after the period of quickening, which takes place, as we have stated, about the sixteenth week of pregnancy. This is considered indispensable by all writers on midwifery.

2596. A woman who has miscarried once, is liable to do so again, and hence she should employ every means in her power to break up the habit, as soon as any of the symptoms of abortion are manifested. This object cannot be accomplished more effectually than by the administration of one or two courses of medicine, for by renovating the general system, they enable the constitution to bear the additional demand which is made upon its powers.

2597. If abortion actually occurs, and the embryo child is expelled without the placenta, the latter should be suffered to remain until discharged by the efforts of nature. The introduction of the hand into the womb with the view of forcing it away, as is practised by some of the diplomatised physicians, is attended with more or less hazard, and may terminate in fatal consequences.

The celebrated Denman remarks, "It has been imagined that the safety of the patient very much depended upon the complete and speedy expulsion of the afterbirth, in cases of abortion; and when it was retained, very active deobstruent medicines, as they are called, were supposed to be necessary, and strenuously given for the purpose of expelling it, lest it should become putrid, and some of the putrified particles be absorbed into the constitution. I believe the whole of this supposition is groundless, having seen many instances of its being expelled in a very putrid state at different periods of pregnancy, when the patient was in perfect health; and if she had any disease, the putridity of the placenta clearly seemed the consequence, not the cause, of the disease. At all events, much less mischief may be expected from the retention of a putrid placenta at this period of pregnancy, than from attempts to force it away by the medicines usually given for that purpose, or by manual assistance."

2598. No evil consequences need be apprehended from the retention of the placenta, if medicines be given to keep the patient in a perspiration; and if flooding, or any other unfavorable symptom should occur, all difficulty may be obviated by giving a thorough course of medicine. Injections per anum, prepared in the usual manner, (1567) have the effect to stimulate the womb into action, and rarely fail to bring away a retained placenta.

HINTS ON TREATMENT DURING PREGNANCY.

2599. Every woman should be impressed with the importance of attending strictly to her health during the pregnant period, for upon this depends the welfare of herself and embryo child. If her system is diseased, the child will be diseased also, and instances are on record of children having been born with syphilis, and other horrible disorders, which they inherited from their mothers. The maternal blood furnishes the exclusive nourishment of the infant, previous to its birth, and if that fluid is rendered impure by disease, or otherwise, it is easy to perceive that it must exercise a highly pernicious influence.

2600. Poisonous drugs should be particularly avoided during pregnancy. Haller states that the use of saffron at this period will change the *waters* or *liquor amnii* to a saffron color; and Baudelocque quotes Levret as saying, that this fluid, where the woman has taken mercury, has the property of whitening copper. These are startling facts for the consideration of mothers, who do not wish to inflict injury upon their offspring. With regard to the effects of mercury, Dr. Denman says, "Instances sometimes

occur of pregnant women being affected with the venereal disease; and we have generally been advised to follow a mode of treatment, by which the *disease was not intended to be perfectly cured*, but moderated and restrained from further progress; leaving the absolute cure to be completed, when the patient was recovered from the state of childbed. This method of proceeding has been recommended on the presumption that *dangerous consequences would result either to the mother or child, if a quantity of mercury was used, during pregnancy, sufficient to root out the disease effectually from the constitution.*"

2601. Blood-letting should not be tolerated during pregnancy, because it deprives the child of a portion of its nourishment, which is the blood, enfeebles the constitutional powers of the mother, and thereby lays the foundation for a tedious, or difficult labor.

2602. A woman should be in possession of all her physical powers in the time of labor, and therefore, if her health is impaired previous to the expiration of her term, it should be reinstated by courses of medicine and proper intermediate treatment, not forgetting to regulate the diet. She will then, in most cases, have an easy labor. I have known *courses* to be administered to women during the seventh or eighth month of pregnancy, with a view of invigorating the general system, and they have assured me that their situation was more comfortable a few hours after delivery, than it had been formerly, under the old practice, in as many weeks.

2603. A woman with her first child, particularly if she be somewhat advanced in years, is more apt to have a tedious labor than at subsequent periods, and it is adviseable, therefore, that she should take a course of medicine a few days or a week previous to delivery, and sit over the vapor of water for a quarter or half an hour every night before retiring to bed. (1499.) This will produce a softening or relaxation of the external parts, and when labor commences, they will readily undergo the necessary distention.

EMETICS.

2604. Since lobelia inflata has acquired so much popularity as an emetic, during pregnancy, and has been discovered to be perfectly safe and harmless, some of the medical profession have engaged in a bitter crusade against its use, denouncing those who employ it in their practice, and declaring that emetics of every description, and particularly lobelia, are almost certain to produce

abortion, or some other equally deplorable consequence. As specimens of this *professional cant*, for I know of no other term by which it can be designated, I will quote briefly from the testimony of some of the leading physicians of New York, in the trial of Dr. Frost,* who were summoned by the government with no other view than to crush, if possible, a growing and rival system of medical practice.

2605. Dr. Cheeseman said he should consider it highly improper to give emetics to women during pregnancy, unless urgently called for, and there were many emetics which he would prefer to lobelia.

2606. Dr. A. G. Smith, who is a professor in the New York Medical College, said, "I do not consider lobelia proper in any case of midwifery. Emetics may sometimes be administered to a lady near, or actually in her confinement, but lobelia would be decidedly an improper article."

2607. Dr. Gilbert Smith was called upon the stand, and the following lucid and interesting dialogue took place between him and the Recorder, who, I add with regret, was leagued with the medical profession to destroy the reformed practice.

2608. *Recorder.* Do you consider it proper, doctor, to give a lady emetics during pregnancy?

2609. *Doctor.* Not unless it would be more dangerous to omit than to use them.

2610. *Recorder.* Would it be proper to puke a lady in that delicate situation, provided she had a fever?

2611. *Doctor.* By no means.

2612. *Recorder.* Would there not be danger of the emetic producing miscarriage?

2613. *Doctor.* If it was lobelia, I think there would.

2614. When Dr. Smith was interrogated by the counsel for the defence, with regard to his knowledge of lobelia, he said he had never used it, although he had been in practice for forty years, nor had he ever known it to be used by any of his brother physicians. He had derived his knowledge of it from medical books, and the titles of those books he could not even name. Now what are we to think of the *candor* of an individual, who will condemn a plant with which he is wholly unacquainted, and endeavor to convey the impression that it is capable of producing miscarriage?

2615. Dr. Cheeseman, also, who declared in his testimony

* Dr. Frost was charged with having caused the death of Tiberius G. French, by the administration of lobelia, and other medicines employed in the reformed practice, when it was shown in evidence, that the patient died under the maltreatment of the diplomatised physicians. See the report of the trial, published in Philadelphia, soon after the official proceedings took place.

that lobelia was as poisonous as prussic acid, acknowledged that he had never used it, and of course could have known nothing of its properties.

2616. The question arises, whether these physicians were sincere in their condemnation of the use of emetics in pregnancy, or whether they were actuated by selfish and wicked motives. On this point, I appeal with confidence to the work of the celebrated Denman, which was republished in New York in 1825, by Dr. Francis, a leading and distinguished member of the medical profession in that city. Denman, speaking in reference to pregnant women, says, "When there are signs of disturbance in the stomach, from offensive humors, or preceding complaints arising from intemperance in eating or drinking, gentle emetics may be given, and the repetition, if necessary, *may be unlimited.*" Again, he says—"When there is nausea or inclination to vomit, without any evacuation, a gentle emetic is the best remedy: and this may be repeated, whenever the urgency of any symptom requires it; experience having fully proved, that emetics may be given to pregnant women with perfect safety."*

2617. Lobelia, however, is the only active emetic which I would use in pregnancy, or which appears to be entirely free from objection. It does not leave behind it the lingering nausea, or debility, which follows the administration of other emetics, but on the contrary, it is no sooner done operating, than the patient feels strengthened and refreshed, having, in most instances, a keen relish for food. It exercises a soothing influence upon the whole system, equalizes excitement, restores a balance to the circulation, and while it evacuates the stomach, does not lay the foundation for a diseased or morbid condition of that, or any other organ. But it is not thus with tartar emetic, and other similar poisons employed in the old school practice, for they often occasion purging, horrible retching, and violent inflammation of the stomach, leaving the patient in a weak, feeble condition, from which she may be several days in recovering. These agents are also a frequent cause of abortion.

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* Francis's edition of Denman, p. 235.

LABOR OR CHILDBIRTH.

GENERAL REMARKS.

2618. Why has the practice of midwifery been snatched from the hands of women, to whom it was at one time confided by public consent? Do they not possess all the requisites for so delicate and sacred an office? Are they deficient in intellect, that their rights should be usurped by the medical profession, who are determined to make the healing art, in all its branches, an odious monopoly? Look for a moment at Madame Boivin, the celebrated lecturer on midwifery in Paris, who superintended the delivery of more than twenty thousand women, and wrote a work on midwifery which is now quoted as authority by the medical faculty in Europe and America. If a woman is capable of teaching the principles of midwifery to large classes of students in the capital of France, surely those of her sex are competent to administer to each other's wants and necessities in the hour of travail.

2619. Apart from these considerations, however, why should a medical man wish to intrude himself into the chamber of parturition, urging upon the poor, deluded woman, the necessity of his attendance, unless he is lost to common decency and propriety? During the latter part of the sixteenth century, popular feeling in Europe was so much opposed to this practice, that a "physician in Hamburgh was publicly branded, because he was induced by curiosity to be present at a delivery, in female attire."* But society has now changed, and the refined and delicate sensibility which characterized a by-gone age, has lost its influence upon the people of the present day. We have shown a disposition to go backward in morals, and make a sacrifice of all that is dear to female delicacy.

2620. The iron hand of medical despotism has not only exercised its influence in the United States, but also in other countries. The Athenians, actuated by a low and grovelling spirit, enacted a law that women should not practice midwifery, but from the determination of those who were resolved to die rather than submit to exposure, the law was speedily repealed.

2621. The Danish government, on the other hand, affords a bright example of moral excellence and purity in this respect, for it viewed the employment of *men midwives*, as they are termed, as highly improper, and established schools for the instruction of women in the principles of midwifery.†

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* Francis 's Denman. † Dr. Ewell.

2622. Two centuries ago, or thereabouts, the practice of midwifery was chiefly confided to women, and was characterized by a great deal of simplicity. To give some idea upon this subject, I will make a few extracts from a work which was written about that time, by a physician in London, and intended for the use of midwives. The writer says, "I have read many books, with all the late writers on midwifery, and I perceive that they all follow one common road, taking their several schemes and figures one from another. * * *. In several of these schemes various things may be perceived which will be troublesome to the woman in labor, which a judicious practitioner will not follow." The writer then observes—"From mine and their directions, let midwives choose the best and easiest ways of relieving women in affliction; and to decide all disputes, let reason be the judge, let experience argue the dubious points of practice; and after a full debate, let unspotted truth record to succeeding times what is most fit to be followed and used."

2623. The same writer makes the following appropriate observation. "Let midwives observe the ways and proceedings of nature for the production of her fruit on trees, or the ripening of walnuts and almonds, from their first knotting to the opening of the husks and falling of the nut; the green husks sticking so close that it is not possible to separate the husk from the shell, whilst it is unripe; but as the fruit ripeneth the husk droppeth and with a fissure openeth, and by degrees separateth the fruit without any enforcement."

2624. Again, he says—"An egg representeth the womb; the hen by keeping the egg warm, doth breed the chicken, which, when it comes to maturity, doth break the shell, and is hatched without injury. These signatures may teach midwives patience, and persuade them to let nature alone to perform her own work, and not to disquiet women by their struggling, for such enforcements rather hinder the birth than any way promote it, and often ruins the mother, and usually the child. Let midwives know that they are nature's servants."

2625. The rules which were so beautifully inculcated by this writer two centuries ago, have been wholly disregarded in modern times; for now, instead of rendering nature the desired assistance, her efforts are paralyzed by the use of the lancet, and a host of mineral or vegetable poisons, and when the strength of the patient is exhausted, her child is dragged away by the murderous forceps, or delivered by means of some dreadful operation. The fruit is not allowed to separate naturally from the husk, but is violently detached, and often withers and dies in common with the parent tree.

2626. The medical faculty inculcate the doctrine, that it is extremely hazardous for a woman to pass through labor without being attended by a physician, but this is very far from the truth. Baudelocque exhibits a table of 17,308 pregnant women who were admitted into the Lying-in Hospital at Paris, and out of the whole number, 17,078 were delivered without the assistance of art. In 49 cases, the forceps were employed, and in 13 others the children were killed by the perforator.

2627. Merriman, in his Synopsis, enumerates 2,947 labors, which produced 2,988 children, some of them being twins, and in only 30 instances were instruments employed. In 2,810 of the cases the head presented, which is always desirable.

2628. From these statements it will be seen that out of 20,255 women, 19,995 were delivered without artificial assistance, leaving only 260 that were doomed to instrumental tortures. Why then should a fee be paid to the physician, when he is merely an idle spectator of the birth of the child? Is it to be supposed that the operations of nature are performed with more certainty or precision, because a gentleman with a *diploma* happens to be leaning against a bed-post in the parturient chamber? Indeed, so useless is the attendance of a physician, that Dr. Gooch remarks, "Whoever engages in the practice of midwifery, must make up his mind to spend many a useless hour in the house of his patients; for if he is absent when the child is born, it will be thought he should have been present; at all events, the patients are assured that he has been of no service, and will grudge him his fee, or perhaps not pay it at all."

2629. But what is to be done, some one inquires, where it is necessary to make use of instruments? The answer is obvious, that if a woman is properly managed, there will be no occasion for instruments. Nature, if properly assisted, will be able to surmount every difficulty. This has been abundantly and satisfactorily tested in the reformed practice, for the last ten or fifteen years. It is very easy to render a labor tedious or difficult by mal-treatment of the patient. Let her be bled, physicked, and dosed with poison, and her constitutional powers will soon be so much enfeebled, that the womb has not sufficient energy to expel the child, and then its skull is either perforated, so as to extract its brains, or it is seized by the physician with a pair of forceps, and dragged forcibly into the world. Copious flooding generally ensues, and the mother, as well as the child, is frequently destroyed. I wish I could say that instances of this kind are rare, but *such is not the fact*, and it is time that the public should take this momentous subject into consideration, for of all the depart-

ments of medicine, there is no one which calls so loudly for reform as that of midwifery.

2630. Let a woman observe common prudence with regard to her health, and avoid the use of the lancet, and all poisonous or pernicious drugs, and she will experience no difficulty in childbirth. This fact has been clearly demonstrated. The native women of Africa and America, for example, do not even employ midwives, so easy are their labors. Mr. Lawrence, in his Lectures on Physiology and the Natural History of Man, observes, "The very easy labors of negresses, native Americans, and other women in the savage state, have been often noticed by travellers. This point is not explicable by any prerogative of physical formation; for the pelvis is rather smaller in these dark colored races than in the European and other white people. Simple diet, and constant and laborious exertion, give to these children of nature a hardiness of constitution, and exempt them from the ills which afflict the indolent and luxurious females of civilized societies. In the latter, however, the hard-working women of the lower classes in the country, often suffer as little from childbirth as those of any other race. Analogous differences, from like causes, may be seen in the animal kingdom. Cows kept in towns, and other animals deprived of healthful exercise, and accustomed to unnatural food and habits, often have difficult labors, and suffer much in parturition."

2631. In Lapland, and other northern countries, where they do not interfere with the process of labor, the women enjoy a similar immunity from suffering.

2632. Among the Araucanian Indians, says Stevenson, in his Twenty Years Residence in South America, a mother, immediately on her delivery, takes her child, and going down to the nearest stream, washes herself and it, and returns to the usual labor of her station.

2633. "The wonderful facility with which the Indian women bring forth their children," say Lewis and Clark, in their well-known journal, "seems rather some benevolent gift of nature, in exempting them from pains which their savage state would render doubly grievous, than any result of habit. One of the women who had been leading two of our pack horses, halted at a rivulet about a mile behind, and sent on the two horses by a female friend. On inquiring of one of the Indian men the cause of her detention, he answered with great appearance of unconcern, that she had just stopped to lie in, and would soon overtake us. In fact, we were astonished to see her in about an hour's time come on with her new born infant and pass us on her way to the camp, apparently in perfect health."

2634. Washington Irving, in his work entitled Astoria, relates a similar incident in the following language. "The squaw of Pierre Dorion, (who, with her husband, was attached to a party travelling over the Rocky Mountains, in winter time, the ground being covered with several feet of snow,) was suddenly taken in labor, and enriched her husband with another child. As the fortitude and good conduct of the woman had gained for her the good will of the party, her situation caused concern and perplexity. Pierre, however, treated the matter as an occurrence that could soon be arranged, and need cause no delay. He remained by his wife in the camp, with his other children and his horse, and promised soon to rejoin the main body on their march. In the course of the following morning the Dorion family made its appearance. Pierre came trudging in advance, followed by his valued, though skeleton steed, on which was mounted his squaw with the new born infant in her arms, and her boy of two years old, wrapped in a blanket, and slung on her side. The mother looked as unconcerned as if nothing had happened to her; so easy is nature in her operations in the wilderness, when free from the enfeebling refinements of luxury, and the tampering appliances of art."

2635. Among the hardy countrywomen of Scotland, childbirth is equally devoid of danger, or difficulty. Alison, in his Principles of the Criminal Law of Scotland, cites the case of Catherine Butler, who in the spring of 1829, two or three days after her delivery, walked from Inverary to Huntley, a distance of twenty eight miles, in a single day, with her child on her back. He says—"It is not unusual to find women engaged in reaping, retire to a little distance, effect their delivery by themselves, return to their fellow laborers, and go on with their work during the remainder of the day, without any other change of appearance than looking a little paler and thinner." He further adds, that "instances have occurred in which women have walked six or eight miles on the very day of their delivery, without any sensible inconvenience."

INSTRUMENTS AND OPERATIONS.

2636. The diplomatised physicians, who practice midwifery, are furnished with a great variety of murderous instruments, to aid them in their vocation, such as the perforator, vectis, blunt hook, and forceps, each of which I propose briefly to describe for the information of my female readers.

2637. *Perforator.* This is a pointed instrument which is thrust into the head of a child, with the view of extracting its brains; the latter are scooped out through the orifice with the handle of a spoon, or in any other convenient manner. The head is thereby diminished in size, and can be dragged from the pelvis more easily. Any tyro can perform the operation, who has the good fortune to pass a year at some medical college. Professor Channing recommends that the work be well done, destroying not only the brain, but the upper portion of the spinal marrow, lest there should be some remnants of vitality remaining. He informed his class that he performed this operation in one instance when the child cried after its brains were out. He said the sound was the most appalling one he ever heard, and no one was disposed to question his veracity.

2638. *Vectis.* This is a sort of lever, resembling the blade of a single pair of forceps, and is used by the diplomatised physicians "to assist the delivery of the child's head." The author of the London Practice of Midwifery, speaking of its application, says—"It is obvious that the force applied by the instrument must be equal to the resistance, if not superior to it; and then mischief may arise to the parts of the child's head so acted upon, producing much injury; the ear may be injured; the lower jaw, or process of the temporal bone may be broken; or any part of the surface, in consequence of the pressure, may slough off or mortify: these evils are by no means imaginary; there are various instances recorded of each of them, and that under the hands of *the most careful and dexterous men.*"

2639. Dr. Gooch, in his Practical Compendium of Midwifery, says, "Not long since a practitioner of great professional accomplishments sent for me to consult with him on a most distressing case: the head during the labor (which had been over four days) had rested a long time on the perineum; he applied the vectis, using it with great care and attention. He succeeded in delivering the woman, and believed the labor to be well over; but within twenty four hours afterwards, a violent burning pain came on in the vagina, with a fetid discharge, and shiverings, followed by a hot skin, and rapid pulse; the teeth and tongue soon became covered with black incrustations; there was low delirium; and death soon terminated the scene. The death of this patient was occasioned by inflammation, gangrene, and sloughing of the vagina, produced by the pressure of the instrument against the soft parts. Even by men who possess more than an average share of skill, instruments are never used without risk of injury to the soft parts."

2640. *Blunt hook.* The name of this instrument implies its office. It is used to drag the child out of the pelvis, when other means have failed. "It is to be placed over the thighs," says the author of the London Practice, "which will certainly command the delivery, and where a small equally applied force is sufficient, it will be both successful and safe; but as it is self evident that iron is always stronger than bone, there will be a great risk of breaking the thigh bone by this instrument." The author concludes by saying, "But the woman is not to die to save the child's bones from the risk of being broken; and it is certainly better to have to treat a child with its thigh broke, than one whose brains have all been scooped out."

2641. *Forceps.* This instrument is made of two very strong pieces of iron or steel, opening and shutting like a pair of pincers, with two long blades to seize the head of the child. It is sometimes armed, says Denman, with teeth or sharp protuberances on the internal surface of the blades which grasp the head. It is intended, he adds, to extract the child without regard to the injury it may sustain. He also observes, that forceps have been made with hinges or joints between the handle and blade of each, *answering no other purpose than that of concealing them, that an operation may be performed with them in a clandestine manner!*

2642. The history of this instrument should be sufficient to deter any humane or sensible man from its use. It was invented by Dr. Chamberlen of London, whose son "took it to Paris, and offered it to Louis XIV. This monarch proposed giving him two thousand pounds for the discovery, provided it was successful. Mr. Chamberlen accordingly applied it in the first case of difficult labor which occurred in Paris. The pelvis was deformed; yet he persisted in applying the instrument with great difficulty and no effect. The woman died; and the body being opened, it was found that in forcing the blades up, he had forced them through the sides of the womb. The moment he found that this was the case, he took to his heels without waiting for a messenger." *

2643. Dr. Gooch says, "The first time I ever saw the forceps applied, it was done with great care by a gentleman as skilful as any in this metropolis; (London) but he lacerated the perineum quite into the anus, and the opening remains to this day. The first time I used them in the Westminster Lying-in Hospital, I lacerated the perineum, and could not avoid it, though I took special care."†

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* London Practice of Midwifery. † Practical Compendium of Midwifery.

2644. Professor Channing of Harvard University, recently exhibited an instrument to his class in the shape of forceps, which he described as the invention of Baudelocque the younger, present teacher of midwifery in Paris. The professor said he received it direct from that city, having purchased it for twenty five dollars. It was of huge dimensions, rough in its construction, and was made of solid iron, weighing not less than thirty pounds. Its entire length was two feet and a half. The parts intended to clasp the head of the child, were heavy clumps of iron, very thick, and about two inches long. They were almost sufficient of themselves to fill the vagina independently of the child. The instrument was made to open by a screw an inch in diameter, and a foot in length, being turned by a handle like an ordinary windlass. It is but justice to Professor Channing to say, that he did not recommend its employment.

2645. *Operations.* The principal of these is the *Cæsarean*, which is performed by cutting through the abdomen into the womb, and extracting the child. It is so termed, because Julius Cæsar is said to have been brought into existence in this manner. It is frequently performed by inconsiderate physicians and surgeons at the present day, notwithstanding it is almost invariably fatal. "Every woman," says Denman, "for whom the Cæsarean operation can be proposed, will probably die; and should any one survive, her recovery may rather be considered as an escape, than as a recovery to be expected, though there is always a probable chance of saving the life of the child."

2646. Merriman saw the operation performed twenty three times in England, and in every instance it proved fatal.

2647. The author of the London Practice says—"We find that the operation has uniformly been fatal in our own country—it has been performed in London, Leicester, Edinburgh, and Manchester, by the best surgeons of these places, and there are none better in the world, but all the patients have died."

2648. In France, the bones forming the pubis are frequently divided at their point of union, (D, Fig. 9, page 609) as a means of enlarging the pelvis, and facilitating the birth of the child. The operation, however, is attended with a great deal of hazard, and generally fails in producing the desired result. "The objections against it," says Dr. Gooch, "are decisive. If you divide the bones by an incision through them, you will find that you do not increase the diameter of the pelvis in the direction in which it is contracted, which is generally from before backwards. The room which this operation gives is in the lateral direction; you therefore gain no increase of the capacity of the pelvis, where it is

chiefly required. Further, the bones after being thus divided may not unite; and the bladder is liable to be injured. The operation has been performed in this country (England) but once; and in that case, strange to say, it succeeded; but in ten days afterwards, the woman died, not from the operation, but from drinking porter and brandy."

SIGNS OF LABOR.

2649. Dating a fortnight after the cessation of the menses, labor generally commences at the expiration of about nine calender months, but there are material deviations from this standard, for it may occur at the seventh month, or not until the tenth or eleventh month.

2650. A child born at seven months may live and do well, but earlier than this, it very rarely survives. George III. was a seven months child, and he enjoyed as long a reign perhaps as any of the English kings. Indeed, a child at seven months is more likely to live than one at eight.

2651. A week or two before labor commences, the womb gradually sinks in the abdomen, as stated in paragraph 2268, and "the motions and weight of the child are felt to be lower than formerly." A few days previous to delivery, a whitish, slimy discharge takes place from the vagina, and the external organs of generation become soft and full. In some instances this discharge is small until labor actually commences. It is intended by nature to lubricate the parts, and facilitate the passage of the child. It is usually tinged with blood, which is familiarly termed the *show*, and this is one of the surest evidences we have of the commencement of labor, for it indicates a detachment of the placenta or afterbirth from the internal surface of the womb. In a few instances the *show* is wanting, while in others it is tolerably copious, and occasionally a considerable quantity of pure blood is discharged.

2652. As labor approaches, the woman complains of tenesmus, and has a frequent desire to pass water. I may here remark, that the bladder should be kept as empty as possible, and the bowels thoroughly evacuated by injections, as this will increase the dimensions of the pelvis, and facilitate the progress of delivery. (See Fig. 10, page 616.)

2653. "The symptoms indicating the commencement of labor," says the author of the Practical Compendium of Midwifery, "are pains in the back and loins extending down the front

of the thighs; these at first continue but a few seconds, and recur every fifteen or twenty minutes; the patient rarely gives evidence of the pain at this period by exclamation; but if you notice her countenance you can easily tell when the pain is on. If she is working or reading, she lays her work or book aside, distorts her mouth, lays hold of the chair, and there is a general appearance of uneasiness, but as soon as the pain is gone, she resumes her work, or takes up her book, and speaks as if nothing had happened."

2654. The pains are divided into *true* and *false*, but in some instances they so closely resemble each other, that it is impossible to distinguish them apart. *False pains*, however, come and go irregularly, occurring sometimes two or three weeks previous to delivery, and are often seated in the abdomen, producing an unpleasant griping sensation. The *true pains*, on the other hand, mostly begin in the back and loins, and return at regular intervals, varying from five minutes to half an hour. They recur more frequently and are of longer duration, in proportion as the labor advances; and in the meantime the membranes, distended with the *waters* or *liquor amnii*, protrude through the mouth of the womb into the vagina. In some instances they descend so low as to be felt at the external orifice of the vagina.

2655. The pains are cutting or grinding at first, succeeded by what are termed the *bearing down pains*. At length the membranes break, and "the waters escape with a gush, deluging the bed. There is now a longer interval between the pains, but sooner or later they recur, and the patient becomes boisterous in the expression of her sufferings; she lays hold of a towel which is commonly fastened to the bed-post for this purpose, and bears down with all her might; her pulse is rapid, and the pains more frequent, strong, and lasting; a degree of impatience is now manifested, and the head of the child descends lower and lower in the vagina, till it presses firmly on the perineum. In this stage of the labor, an inexperienced person would think that a few pains would expel the child, but though the head rests on the perineum,* and presents at the external orifice, yet it may be some hours before it is expelled, more especially if it is the first labor; but if the second or third, half a dozen pains will generally be sufficient to complete the process."

2656. Labor commences with the slow and gradual opening or dilatation of the mouth of the womb, which causes the grinding or cutting pains previously mentioned; and the diplomatised physician, instead of leaving this process entirely to nature, thrusts

* This term has already been explained, and signifies the space between the anus and lower angle of the labia. (2577.)

his hand into the vagina, and endeavors to bore his clumsy fingers into the orifice of the womb, under the pretext of aiding in its dilatation. This barbarous practice, I am happy to say, is condemned by some of the medical profession themselves. Professor Channing, in one of his lectures, said, "According to Dr. Hamilton of Edinburgh, it is a fixed rule never to allow the mouth of the womb to be over twelve hours in dilating, before attempting to render artificial assistance, but Dr. Collins of Dublin, who has superintended fourteen thousand cases of labor, says that this practice is founded in error; that we should never interfere with the natural process under any circumstances; and he strengthens himself in his position, by saying, that he has been far more successful in practice than Dr. Hamilton. Indeed, a sharp controversy has been carried on between these able writers, and you have authority therefore, for any kind of treatment which you may be disposed to pursue."

EXAMINATIONS, AND RUPTURE OF MEMBRANES.

2657. If there is any one feature of the old school practice more objectionable or revolting than another, it is that of making frequent examinations during labor. It is not only indecent, and immoral in its tendency, but is often attended with serious or fatal consequences to the patient. In expressing my disapprobation on this subject, however, I shall confine myself principally to the remarks of eminent medical writers, lest it should be thought that I am unnecessarily fastidious in a matter which has received the almost universal sanction and approval of society.

2658. Dr. Denman remarks, "In every thing which relates to the act of parturition, nature, not disturbed by disease, or molested by interruption, is fully competent to accomplish her own purpose. She may be truly said to disdain and abhor assistance."

2659. He says in another place, "From a retrospective view of the practice of midwifery, in all former times, and in all countries, every intelligent person sees, and is ready to acknowledge, that there has been too officious an interposition, and too great a readiness to give assistance in various ways, for the relief of many difficulties attending parturition; which are not only fully proved to require no assistance, but which are also now allowed to be surmounted in a safer and more effectual way by the resources of the constitution."

2660. Here is another paragraph from the same source: "The native powers of the constitution, when not interrupted,

are not only superior to the common obstructions of the process, but in general, to the various kinds and degrees of deviation from the natural course of labors."

2661. In enumerating some of the causes of difficult labor, the same distinguished writer remarks, "There is one much more frequent than the rest, which is, the derangement of the order of the labor by an officious interposition, or by improper management. Upon this subject it would be unpardonable to make an assertion, which is not supported by experience; but I am not fully convinced, that the far greater number of really difficult labors to which I have been called, (and I must not conceal the truth, many of those which have been originally under my own care) were not of that denomination from unavoidable necessity, but were rendered such by improper management, in the commencement or course of the labor."

2662. Dr. Bard, speaking of examinations, says—"What terms shall I use to condemn, as it deserves, the abominable practice of boring, scooping, and stretching the soft parts of the mother, under the preposterous idea of making room for the child to pass. It is impossible to censure this dangerous practice too severely; it is always wrong; nor can there be any one period in labor, the most easy and natural, the most tedious and difficult, the most regular, or preternatural, in which it can be of the least use—in which it will not unavoidably do great mischief: it will render an easy labor painful—one which would be short, tedious—and one which, if left to nature, would terminate happily, highly dangerous."

2663. "Unfortunately for the interest of humanity," says Dr. Dewees, formerly Professor of Midwifery in the Pennsylvania University, "it requires more knowledge not to be officious, than falls to the share of many of those who pretend to practice midwifery. It is a vulgar prejudice, that great and constant benefit can be derived from the agency of the accoucheur, especially during the active state of pain; and this feeling is but too often encouraged by the ignorant and designing, to the injury of the patient, and disgrace of the profession."

2664. Baudelocque is very severe in his remarks upon the French midwives for undertaking to dilate the parts concerned in delivery, as soon as any symptoms of labor are manifested, and says that these "manœuvres," as he terms them, "often produce an effect quite contrary to what the midwives expect; for by depriving the organs which they handle so incautiously, of the *mucus* which nature furnishes at that time abundantly, for no other purpose than to relax them, they irritate and dry them so much, that they seldom fail to inflame and become extremely painful."

2665. The French midwives are no doubt deserving of all the censure which Baudelocque has bestowed upon them, but it must be remembered, in extenuation, that they have borrowed their ideas of practice from the *French physicians* themselves, who are notorious for their love of making examinations. The medical faculty in France should endeavor to reform themselves, before they undertake to reform the midwives.

2666. Gooch furnishes a very good argument against examinations, and one which should be constantly borne in mind. "The changes of the womb succeeding conception," he says, "are not those of size only, but also of structure. The parietes or coats become so soft and pulpy, that it is easy to thrust the finger through them; and I warn you that if you have your hand in the womb, and should, during a labor-pain, push your finger against it, nothing is more likely than that your finger will pass through its coats."

2667. "One cause of difficult labor," says the author of the London Practice of Midwifery, "is the irregular contraction of the muscular fibres of the womb; and this always arises from irritation of the mouth of the womb in *needless examinations.*"

2668. Much stress is here laid upon "needless examinations," but the intelligent and unprejudiced reader will probably conclude, after perusing the foregoing extracts, that they are all *needless.*

2669. The diplomatised physicians, as much as they may feel disposed to boast of their acquirements, make some ludicrous blunders in their examinations. Some of my readers will probably recollect the anecdote of a professor of midwifery in Paris, who, in one of the Lying-in Hospitals, made an examination of a woman in labor, and declared that the head presented, while, in truth, it was the *breech*, the students in the meantime amusing themselves with the mistake of their distinguished *teacher!* because they saw the meconium* on his fingers.

2670. As much as the practice of making examinations deserves to be reprobated, I have no wish to condemn them indiscriminately, for in some instances they are requisite. I will give an example. A lady of Boston had symptoms of labor at the natural period, and slight pains were experienced for several days. Abhorring the idea of exposure to a physician, she solicited the advice of an intelligent female friend, who suspected thickening of the membranes. An examination was made by the latter, and the membranes were found protruding beyond the external organs of generation. Being unusually thick and strong, they were care-

* The excrements which are first evacuated by the child after its birth.

fully clipped with a pair of scissors, and delivery took place immediately. Such an examination by such a person was appropriate and necessary, and the patient had not the mortification of being exposed to the rude or perhaps unhallowed gaze of a physician.

2671. Excepting in a case like the preceding, the membranes, as a general thing, should not be ruptured, for nature will perform this part of her work as she performs every other, with perfect order and regularity. Besides, the waters contained within the membranes, serve as a protection to the child, and if they are prematurely discharged, the infant is frequently destroyed by the contractions of the womb. This led Denman to remark, that "the untimely rupture of the membranes, whether natural or artificial, has been often mentioned as the cause of much mischief, and of many tedious or difficult labors." He also says—"We will agree in establishing it as a general rule for our own conduct, that the membranes should never be ruptured artificially, at least before the mouth of the womb is fully dilated, and be persuaded that it is afterwards unnecessary, unless there should be some cause more important than the mere delay of a labor, or some reason of more weight than those which have been commonly assigned." He also observes, in his *Aphorisms*, that "the premature rupture of the membranes, is the most general cause of difficulties in parturition."

2672. The author of the London Practice, says, "Rigidity of the membranes has been stated to produce difficult labor. It has sometimes, though rarely, happened, that labor has been quicker when the membranes were ruptured easily; but though the labor be slower, it is safer, where the membranes remain entire. Where they are to be opened, there have been a great number of pretty looking instruments invented for doing it—long tubes, at the end of which blades or points were projected; but it requires more skill in telling where they should be let alone, than where they should be used."

2673. Women should be aware of the fact, that they are sometimes grossly and wickedly imposed upon by the medical faculty, during labor, and if they have any doubts on this subject, I respectfully submit to their perusal the following paragraph from the London Practice of Midwifery, from which I have already frequently quoted. "A patient, after the waters are discharged," says the author, "requires a little management; it is not just to stay with her at the time; and yet it is necessary, if we leave her, to leave her in confidence; therefore we may give her the idea of making provision for whatever may happen in our absence; we

may pass our finger up the vagina, and make a moderate degree of pressure for a few seconds on any part of it, so that she may just feel it, after which we may say to her, 'There, ma'am, I have done something that will be of great use to you in your labor.' This she trusts to; and if, when she sends for us, we get there in time, it is well; if later than we should be, we easily satisfy her: 'Yes, you know I told you I did something which would be of great service to you in your labor.' If the placenta is not yet come away, 'Ah! I am quite in time for the afterbirth, and that you know is of the greatest consequence in labor.' And if the whole is come away, 'We are glad the afterbirth is all come away, in consequence of what we did before we last left the patient, and the labor terminated just as we intended it should.'"

POSITIONS OF WOMEN.

2674. These vary in different countries, according to fashion or custom. In Holland, Germany, and Spain, women are delivered in a chair, constructed for the purpose. In France, they lie upon the back; in some other parts of Europe, they kneel on a cushion, and rest their elbows on a chair or sofa. Many women prefer to be delivered while sitting on the lap of a friend. In England and the United States, it is common for a woman to lie on her left side near the edge of the bed, with her knees drawn toward the abdomen, and separated by a pillow.

2675. "The situation of the woman," says Baudelocque, "must be varied according to circumstances, and the period of labor. When it is but just begun, and is not complicated with any accident, and every thing relative to delivery is in good order, the woman may choose the situation which appears most convenient to herself."

2676. Professor Dewees, in his edition of Baudelocque, says, "The mode usually pursued in this country, is to have the patient's bed made in the common way, with the addition of a folded blanket in the middle of it, and under the lower sheet; then we separate the sheets by rolling the bedclothes from one side nearly to the other. The foot of the bed is then well beaten to make it firm, over which part another folded blanket is spread; the patient is then for the most part placed on her left side, her knees a little bent, her hips placed near the edge of the bed, while her feet are firmly pressed against the bed post. A pillow, rolled tight and tied, is placed between her knees in the advanced period of labor; a sheet or blanket, according to the weather, is thrown over her; her head is raised by pillows. The advantage arising from this

mode, is that when labor is finished, the patient, after having the wet things taken from about her, is easily drawn up in the bed, without fatigue or even disturbance."

2677. The following position possesses peculiar advantages in some cases of difficult labor. The woman sits on the foot of a bed, with her feet resting upon a trunk, box, or stool, having the knees some distance apart, while a sheet, twisted lengthwise into a soft roll, is stretched across the small of her back, and supported at each end by an assistant. When a pain comes on, she leans with her back against the sheet, which is now held firmly by the assistants, and braces her body by pressing with her feet upon the box, or stool, which must be of the requisite height for this purpose. She may derive still further support by grasping the sheet with her hands, or seizing a towel attached to the bed-post, on either side. By this arrangement, she has full command of her physical powers, and the partially erect position of her body, favors the descent of the child in the pelvis. In the absence of a pain, unless delivery is close at hand, the woman may repose upon the bed, or walk about the room, according to her wish or inclination. In regard to position, however, no positive rules can be given, for this must be varied, as Baudelocque observes, according to circumstances. Indeed, we often find a woman in labor, unconsciously seeking that position which is the most natural, and the best adapted to the expulsion of the child.

CATHETER.

2678. If the head of the child is low in the pelvis, and presses for a sufficient length of time against the urethra, or neck of the bladder, (see Fig. 10, page 616) it will occasion retention of urine, as mentioned in retroversion of the womb, (2582, *et seq.*) and the bladder will be in danger of bursting, unless its contents are drawn off with a catheter. The mode of using this instrument has been described in paragraphs 2587–89. I have never known of a case in the reformed practice in which it was necessary to employ a catheter, but as instances of the kind may occur, particularly where the labor has been protracted by mal-treatment, such as blood-letting, or the use of poisons, it is adviseable to be prepared with the means of affording relief.

DIFFERENT PRESENTATIONS.

2679. The position of the child or fœtus in the womb, is such as to occupy the least possible space. The thighs are

doubled upon the abdomen, and the legs upon the thighs. The feet necessarily lie close to the breech, and are mostly crossed. The chin rests upon the breast. "The elbows are in contact with the sides, and the hands turned up to the head, one of which is often placed upon the cheek or ear." This position varies, however, in a great variety of ways. The head, nevertheless, is generally downward, and is therefore almost invariably the presenting part. In 17,499 births which occurred in one of the Paris Lying-in Hospitals, 16,286 of them were presentations of the vertex or crown of the head. It will be seen therefore, that the deviations from the established laws of parturition are not very numerous; other parts, however, as well as the head, occasionally present, as I shall proceed to notice. By the examination of women who have died previous to, or in the act of childbirth, says a writer on the subject, it has been ascertained, that whatever may be the situation of the child in the early part of pregnancy, such it will be at the time of labor, unless, indeed, the position be altered by some accidental violence, which very rarely happens.

2680. HEAD. The first stage of labor consists in the dilatation or opening of the mouth of the womb, which allows the membranes investing the child to protrude into the vagina. This is called the *gathering of the waters*. At length, from the forcible contractions of the womb, the membranes break, followed by a gushing or discharge of the *waters* or *liquor amnii*. Sooner or later, according to the strength or frequency of the pains, the head makes its appearance externally, and with one or two additional pains, the body is usually expelled. The labor is always the most easy and natural, when the vertex or crown of the head presents, and passes under the arch of the pubis or front bone. (See Fig. 9, page 609.) There are deviations from this order, however, for occasionally the face presents; or the face may incline toward the pubis, and the vertex toward the spine or back bone; or one or both arms may come down with the head; but in neither case have we any reason to anticipate difficulty. Denman says, "Experience has fully proved that in either of these positions, the head may be expelled by the natural efforts with perfect safety to the mother and child, though not generally with such ease and expedition as if the hind-head or crown was turned towards the pubis; unless the head be very small."

2681. As soon as the head is expelled, it should be observed whether the umbilical cord is around the neck of the child, and if so, it is to be drawn down carefully and removed. Sometimes it is passed two or three times round the neck, and if the removal

is attended with difficulty, care must be taken not to break the cord by undue force or violence.

2682. The *perineum*, which is the space between the lower angle of the labia and the anus, (2577) is sometimes pushed forward by the head of the child during the process of labor ; and in the old school practice is frequently lacerated, but I am satisfied that the accident would never occur if proper treatment was pursued, and the rigidity of the external parts overcome by the local application of vapor, (1499) or cloths wrung out of water as hot as it can be borne by the patient. Supporting the perineum with the hand, as is generally practised by the diplomatised physicians, does not appear to be of any avail, and is thought by some to be injudicious. Denman says, it may be very much doubted, whether some of the methods practised to prevent laceration of the perineum, may not in fact be the cause of the accident; and he adds, that "when women were delivered without assistance, he has not in any instance observed any very considerable laceration."

2683. Dr. Warren of Harvard University, in some remarks on this subject, in one of his lectures, said, "According to my experience no benefit is derived from attempting to support the perineum ; if it is in a condition to be ruptured, the rupture will take place under any circumstances; it cannot be prevented by an application of the hand; I have known the perineum to be ruptured when it was supported by the hand."

2684. Breech. The breech may be distinguished from the face or head, by the absence of the nose, ears, and other familiar parts. When it presents, the child is born double, and mostly without difficulty, though the labor is apt to be somewhat more tedious than in ordinary cases. If delivery does not take place soon after the body is expelled as far as the navel, the child may die from compression of the umbilical cord, through which its life is exclusively maintained until respiration is established. Hence it is recommended by some writers to hasten the delivery; and this is to be accomplished by passing one or more fingers into the groin, using a gentle degree of force, and operating during the continuance of a pain. If the cord is upon the stretch, it must be pulled somewhat lower down, or the circulation of the blood through it will be arrested as effectually as though it were compressed. There are other writers and teachers of midwifery, who are not in favor of hastening the delivery until the shoulders are expelled, and among these is Professor Hodge of the Pennsylvania University, who assigns as a reason, that the chin may be thrown from the breast, and the head thereby locked in the pelvis.

Whatever danger there may be from compression of the cord, he thinks there is still greater danger in attempting to force the delivery; and there are many eminent physicians who concur with him in this opinion. After the shoulders are expelled, however, and the head is in the lower strait of the pelvis, delivery must be accomplished in a few minutes, or the child will die. A napkin or towel may be passed round the breech, and the head worked gently from hip to hip, so as to favor the extraction, but too much force must not be employed, or dangerous consequences may ensue.

2685. "When the child is brought down as low as the shoulders," says Dr. Denman, "it has been esteemed by some a very injudicious practice to bring down the arms; while others have considered this step absolutely necessary in all cases, the arms, according to them, occupying a portion of that space which should be filled by the head only. If the extraction of the head with the arms turned up, be on trial found tolerably easy, there is clearly no occasion to bring them down; but if the head should remain fixed in such a manner as to resist the force which we think can be safely or prudently exerted, then the arms ought to be successively brought down, but very cautiously, lest they should be fractured or dislocated, or be forced down so suddenly as to lacerate the perineum.

2686. "When the arms are down, should there be much difficulty or delay in the extraction of the head, it will be of great service to pass the fore finger of the left hand into the mouth of the child, and to press down the jaw towards the breast—but not to pull by it—in order to change the position of the head, which may be easily done, and the extraction thereby greatly facilitated."

2687. Dr. Francis, the editor of Denman, follows the above paragraph with a note, in which he says, "By placing one or two of the fingers upon the face of the child, just below the orbits of the eyes, we have a much greater, and probably safer purchase, to enable us to change the position of the head. Accoucheurs do not seem to reflect upon the condition of the lower jaw; and that it may at this early state, be easily broken or dislocated."

2688. If there is sufficient evidence of the death of the child, it may be left to be expelled by the natural efforts, for there is no necessity, under these circumstances, of forcing the delivery.

2689. The practice of bringing down the feet, in a breech presentation, is unnecessary, and is said by some experienced accoucheurs, to be productive of more harm than good.

2690. Feet and Knees. A presentation of either of these,

does not require any special notice, for as soon as the limbs are expelled as far as the breech, the case is to be managed precisely as though it was an original breech presentation.

2691. Arm. When the arm or shoulder presents, the body lies across the pelvis, which renders the labor more or less tedious. By pushing the arm back, when this can be done without difficulty, the head will sometimes come down, and the delivery take place naturally; but if the arm cannot be easily returned, it has been advised that the midwife pass her hand into the womb, and bring down the feet. There is but little to be said in favor of this operation, however, though it may in some instances answer a good purpose. The hand should be smeared with lard, or the mucilage of slippery elm, and carried up in the direction of the feet, which are to be brought down so as to allow of a natural movement of the joints—that is, the limbs are not to be twisted across the back, or they will be broken, or the joints dislocated. "If both feet cannot be readily grasped and brought down together," says Dr. Gooch, "bring down one first, and then the other;" or if one foot should remain, delivery will take place with the limb doubled upon the body, as in presentation of the breech. It is important that a hand should not be mistaken for a foot, as this might lead to serious consequences in attempting to perform the operation of turning. As the feet are brought down, the arm will recede, until it finally disappears. The effort to turn should never be made during a pain, as the womb is then contracting on the child, and would render the operation impracticable. The turning accomplished, let the labor proceed as though it were an original case of the breech. If the presence of the hand causes the womb to contract, which it frequently does, and that too in the most violent manner, the hand should be laid perfectly flat until the contraction ceases, or there will be danger of rupturing the organ. Indeed, this is a strong objection to the operation, unless it be performed with exceeding care; and moreover, it is sometimes found impossible to turn the child under any circumstances whatever.

2692. Dr. Gooch says, "In some instances when the hand or shoulder presents, the head rests on the edge of the brim of the pelvis; and if you return the presenting part, the uterus is so stimulated to a vigorous action, by the introduction of the hand, that the head is thrown off the brim of the pelvis, and descends as in a natural presentation. I have succeeded in this way in many cases, and in some to which I was called for the express purpose of turning; while apparently only making a common examination, I have returned the presenting part, and then waited for a pain,

which has brought down the head. I have then desired the attending practitioner to examine; and he has been surprised to find that the arm was converted into a head presentation. On one occasion when the arm presented I pushed it up, and down came the umbilical cord, which I carefully replaced; the uterus immediately contracting forced down the head, which of course continued to be the presenting part until it was expelled. In arm presentations when the body of the child is completely across the pelvis, you must turn and deliver; but if the head is only a little removed from its natural position, then return the hand, in the hope that the head at the next pain will assume its place."

2693. Cases have frequently occurred in which turning was altogether out of the question, and yet the woman has been delivered by the natural efforts with comparative ease. Denman, speaking of presentations of the arm and shoulder, says, "In some cases, when we are first called, the shoulder is so far advanced into the pelvis, and the action of the womb is at the same time so strong, that it is impossible to raise or move the child, which is so forcibly impelled by the pains as to *overcome all the power we are able to exert.* This impossibility of turning the child had, to the apprehension of writers and practitioners, left the woman without any hope of relief. But in a case of this kind which occurred to me about twenty years ago, I was so fortunate as to observe, though it was not in my power to pass my hand into the womb to turn the child, that by the mere effect of the action of the womb, an evolution took place, and the child was expelled by the breech."

2694. If, then, where it is impossible to turn the child, nature is competent to effect its delivery, why should we ever call in the assistance of art? It may be said, however, that the above is only a solitary case, and is not sufficient to establish a rule of practice. Very true, but it happens that instances of this kind are very frequent. Denman observes, that "the cases in which this *evolution* has occurred, are now so numerous, and supported not only by many examples in his own practice, but established by such *unexceptionable* authority in the practice of others, that there is no longer any room to doubt of the possibility of its happening, more than there is of the most acknowledged fact in midwifery." Denman, I may add, is not entirely opposed to turning, when it can be performed with safety to the mother, or afford a better chance of saving the child, but he observes, "when we are called to a patient with a preternatural labor, in which there is little or no reason to hope for the presentation of the child, or in which we are assured of its death, or when the operation of turning cannot be performed without violence, and some danger to the mother; then the knowledge of the spontaneous evolution

will set our minds at ease, and disengage us from the consideration of making any hasty attempts to perform a hazardous operation, from which no possible good can be derived, except that of extracting a dead child, and which, at all events, might be effected by a method far more safe to the mother."

2695. Among the many cases of *spontaneous evolution*, as it is termed, in which turning was formerly thought to be indispensable, an interesting one is mentioned by Gooch in the Medical Transactions of the London College of Physicians. The patient was a young woman with her first child. The membranes broke, and an arm descended, protruding its whole length, while the shoulder pressed forward under the arch of the pubis. Dr. Gooch says—"I abstained from turning, and sat down by the bedside, fully expecting what actually took place, the *spontaneous expulsion*. Resolved to know what became of the arm if this should happen, and thus fit myself for a witness on the disputed point, I laid hold of it with a napkin, and watched its movements; but so far from going up into the womb when a pain came on, it advanced so rapidly, that in two pains, with a good deal of muscular exertion on the part of the patient, but apparently with less suffering than the birth of the head in a common first labor, the side of the chest, the abdomen, and the breech, passed one after the other in an enormous sweep over the perineum, until the buttocks and legs were completely expelled. The head and remaining arm were still to be extricated, but this was effected with the greatest ease. The child was dead. The mother had not felt it move since the previous day, at noon. The cord was without pulsation, and empty and shrunk, looking as if the blood had not circulated through it for some time. The side of the chest which came foremost, was of a green color, having the skin peeled off."

2696. Here we have ample evidence of what may be accomplished by nature, if left to her own resources; and if physicians would learn to repose more confidence in her powers, and cease to paralyze her efforts by their deleterious mode of practice, they would be less amenable to the charges of ignorance and barbarity which are now so frequently preferred against them.

2697. With regard to turning, if it is resorted to at all, let it be performed with the utmost caution, and under circumstances which promise a positive advantage to the mother or child. Dr. Collins, an eminent writer on midwifery, in commenting upon this subject, observes, "I know of no operation more truly dangerous, both to mother and child, than the artificial dilatation of the mouth of the womb and turning the child; and confident I am, that the practitioner who adopts such a line of practice, *except from strict necessity*, will often have abundant cause to regret his proceedings."

2698. Umbilical Cord. The umbilical cord, which is usually about twenty inches long, though sometimes more than double that length, occasionally comes down in advance of the child, and if it suffers compression, so as to stop the circulation of blood through it, the child must inevitably die. It is necessary therefore to return it beyond the presenting part, and support it in that situation until a pain comes on, when, if the child advances, there is a chance of its being retained. The operation may be performed with the hand, or we may employ a very thin, narrow slip of whalebone, notched at the end to receive the cord, and covered with a piece of fine linen or silk, to prevent it from injuring or irritating the parts with which it comes in contact. It is sometimes necessary to return the cord a number of times before it will remain. In some instances it may be conveniently suspended on a leg or an arm of the child, and retained in that manner. If the cord is flaccid and without pulsation, it is an evidence that the child is dead, and the labor under these circumstances, may be allowed to proceed without interruption. The pulsation may cease during a pain, however, in consequence of the compression which necessarily takes place, and be resumed after the pain is over.

2699. Placenta. When the placenta or afterbirth presents, there is often considerable flooding. This is to be checked by the usual course of treatment in such cases, which will also have a tendency to increase the labor pains, and expedite the delivery. If the flooding is copious, a course of medicine should be given without delay, but if the discharge of blood is so slight as not to excite any apprehension, it will be sufficient to keep the patient in a perspiration by the free use of some stimulating tea, such as composition, catnip, ginger, pennyroyal, or raspberry, adding cayenne and nerve powder as circumstances may seem to require. Injections per anum and the vapor bath may also be employed, if they are requisite, in order to maintain the equilibrium of the circulation, which is the grand object to be attained in all cases of flooding or hemorrhage.

DURATION OF LABOR.

2700. This varies according to circumstances. In some instances it is completed in less than ten minutes, by two or three brisk pains, while in others it may continue for several hours, or even days. In the old school practice, twelve hours is considered a very short period. In the Lying-in Hospital in the Uni-

versity of Berlin, a woman was in labor six days and six hours, and was then delivered without artificial assistance.

2701. A lady of Boston, an advocate of the reformed practice, not being disposed to employ the necessary remedies, was taken in labor about six months ago, and lingered for three days in great distress, without delivery taking place. I was consulted in the case, and directed a tea-cupful of composition and scullcap tea to be given, succeeded by an injection per-anum, and the vapor bath. After the bath, the patient was placed in bed, and a dose of medicine prepared as follows. To a tea-cupful of composition tea, boiling hot, a tea-spoonful each of scullcap and green lobelia, and half a tea-spoonful of cayenne were added. After steeping until sufficiently cool to administer, the liquid was poured from the sediment, sweetened with sugar, and given at a single draught. Labor pains succeeded almost immediately, and in five minutes the delivery was accomplished.

2702. If the child is unusually large, and the pelvis small, the labor will be proportionably tedious, because a greater length of time is required for the complete dilatation of the parts. Among the causes of tedious labor, are depression of spirits, fear, a loaded state of the bowels, weakening the action of the womb by blood-letting, and giving the patient mineral or vegetable poisons. A first labor, especially if the woman be somewhat advanced in life, is generally more tedious than subsequent ones.

TREATMENT DURING LABOR.

2703. If there is any period in a woman's life when she requires the full possession of her physical powers, it is in the hour of travail. Hence, instead of depriving her of blood, and destroying her constitutional energies by the administration of poisons, her health and strength should be maintained by the use of medicines which act in harmony with the laws of the human system. Such are the agents employed in the reformed practice, and those who have tested them in cases of midwifery, will bear testimony to their superior value and efficacy. Dr. Robinson, in some remarks on this subject, says, "In child-bed delivery, a matter never to be forgotten, this practice has very nearly removed the pain and punishment from the daughters of Eve, threatened to our progenitor, and entailed upon her offspring. A lady of good sense, and without the least coloring of imagination, said it was easier to have five children under the operation and influence of this new practice, than one by the other management and medicine; and she had had experience in both cases, and has been

supported in the evidence by every one who has followed her example."*

2704. I have spoken in a previous place of the necessity of keeping the bladder as empty as possible, and evacuating the bowels thoroughly with injections. (2652.)

2705. When labor commences, a tea of raspberry leaves, adding one or two tea-spoonfuls of cayenne to the pint, may be given occasionally as a drink, to keep up a gentle perspiration. The stimulating tea may be employed with still greater advantage, as it tends to quiet any irritability of the nerves which may exist, and produces a gentle relaxation of the muscular system, which is necessary in order to procure an easy delivery. If nausea or vomiting is present, an emetic should be given to cleanse the stomach, administering the infusion of lobelia without the sediment. (1612.) The patient's room should be ventilated before she goes into it, and the temperature regulated according to the climate or season. Many a labor has been rendered tedious, by allowing the woman to become chilled for the want of a fire. If the patient has an appetite for food, let her partake of some oat meal, or Indian meal gruel, or any other preparation that will digest easily, and not oppress the stomach.

2706. Dr. Burns, in his well known work on obstetrics, remarks, "A fundamental principle in midwifery is, that relaxation or dimunition of resistance is essential to an easy delivery; and could we discover any agent capable of effecting this rapidly and safely, we should have no tedious labors except from the state of the pelvis or position of the child. This agent has not yet been discovered. Blood-letting does often produce salutary relaxation; but is not always to be depended on, neither is it always safe."

2707. The agent so earnestly desired by Dr. Burns, is to be found in the *lobelia inflata*, which will "rapidly and safely" relax the muscular system, without laying a foundation for protracted debility, which must necessarily accrue from blood-letting, particularly if it be copious. Some remarks on lobelia, with regard to its relaxing influence, will be found in paragraph 1648.

2708. False Pains. The character of these have already been described. (2654.) They may be quieted by an injection or two (1567) per anum, and a free use of either of the teas mentioned in the above paragraph, taking it in a sufficient quantity to produce perspiration. The parts in which the pains are seated, may be rubbed briskly with vinegar and cayenne, (1531) or the

* Lectures on Medical Botany. Boston, 1838.

stimulating liniment, the latter of which is preferable. If the pains are accompanied with fever, or other symptoms of severe indisposition, an emetic, or course of medicine should be administered.

2709. Rigidity of the External Parts. If the external parts of generation are closely contracted, and void of all disposition to dilate, they may be relaxed by the application of cloths wrung out of water as hot as it can be borne; or the patient may sit for a quarter or half an hour over the vapor of water; (1499) or if it is more convenient, she may employ the *hip bath*, as directed in paragraph 2493. In the meantime some appropriate tea should be taken internally, to maintain a gentle moisture of the skin. By this mode of treatment the parts will become relaxed and soft, and when the head of the child is expelled, it will not tear or lacerate the perineum. If, also, the parts are dry and heated, as frequently happens where they have been irritated by the rude hand of an officious attendant, the vapor has an equally good effect in restoring to them their natural secretion or mucus, with which nature intended they should be furnished during the period of labor. (2651.)

2710. Lingering Pains. If the labor is tedious, and the pains have died away, the following may be given with the most beneficial effect. Take of composition and green lobelia, each a tea-spoonful; cayenne half a tea-spoonful; sugar any desirable quantity; boiling water a tea-cupful. Steep in a covered vessel until sufficiently cool to administer, and pour the liquid from the sediment, adding one or two tea-spoonfuls of rheumatic drops, or an equal quantity of the tincture of scullcap. This may be taken at one dose, and repeated in fifteen minutes, if necessary. I have never known it to fail in producing efficient labor pains, and bringing the labor to a speedy and favorable issue.

2711. Where the lobelia is employed in the form of powder, the infusion only should be administered, for the sediment is liable to adhere to the mucous coat of the stomach, and thereby keep up lingering nausea, or vomiting, after the child has been expelled.

2712. The vapor bath is a valuable agent in renewing labor pains, when they have died away; and in connexion with it, the following tea may be administered. Take of composition and scullcap, each a tea-spoonful; boiling water a tea-cupful. Steep in a covered vessel, as directed above, strain, sweeten to suit the taste, and add a table-spoonful of the antispasmodic tincture. This is to be administered to the patient as she is leaving the bath, or immediately after she is in bed.

2713. Dr. Thomson was called to a woman in Greenfield, Saratoga county, N. Y., who had been in labor ten days, and whose life was despaired of by her husband and friends. He took of composition, cayenne, lady's slipper, and brown lobelia, each a tea-spoonful; sugar a large table-spoonful; boiling water a tea-cupful. After steeping a sufficient length of time, he poured the liquid from the sediment, and administered it at a single dose. In less than fifteen minutes the child was born, contrary to the expectations of all present, and in a short time the woman was able to be upon her feet.

2714. Flooding. This is a discharge of blood from the womb, caused by a partial or complete detachment of the placenta or afterbirth, and may occur either before, during, or after labor. When it is profuse, it is manifested by chilliness, fainting, pallid countenance, hurried breathing, and great prostration of strength. These symptoms may occur without any appearance of flooding, and if there is also a sudden enlargement of the abdomen, we have every reason to suspect an accumulation of blood in the womb, in consequence of the mouth or orifice of that organ being closed.

2715. If flooding occurs after the birth of the child, and before the placenta has been expelled, it is an established rule with the diplomatised physicians to bring it away by force—that is, by thrusting the hand into the womb, and scooping or tearing it out by violent means. This practice greatly enhances the difficulty, however, for bloodvessels are torn or lacerated which, otherwise, might have remained uninjured, and the flooding is necessarily increased. Besides, the womb may fail to contract at all, in consequence of the injury which it has received, and under these circumstances the patient may ultimately bleed to death. If, however, the placenta was left to be expelled by the natural efforts, instead of employing force, the womb would contract upon the bleeding vessels, and thereby arrest the hemorrhage.

2716. *Treatment.* The principles of treatment in flooding are the same as in bleeding or hemorrhage from the lungs, (1782, *et seq.*) or any other internal organ. The circulation must be equalized, and then the difficulty will be overcome. If the discharge of blood is but slightly increased beyond what we naturally expect in cases of labor, we may generally check it by giving composition, or cayenne and bayberry, until perspiration ensues, assisting the operation of the medicine by an injection per anum, and the application of heated stones wrapped in damp cloths to the feet and sides. If however the flooding is copious, the treatment

must be active, or the patient will soon become exhausted, and probably die. One or two stimulating injections (1567, 1574) should be given, and lobelia administered in full doses as an emetic, steeping it in strong cayenne and bayberry tea. The antispasmodic tincture is the best form of the medicine, as it is more immediate in its effects. It may be given in the dose of three or four tea-spoonfuls, and repeated as often as circumstances require. Heated stones, as already mentioned, must be placed about the patient, to favor perspiration, and keep up a determination of blood to the surface of the body. It is also important to remain in bed, avoiding an erect position, until the flooding ceases.

2717. Fainting. This may occur from loss of blood, or from mere fatigue or exhaustion. In the latter instance, cool air, sprinkling the face and breast with cold water, the horizontal posture, and the application of vinegar, camphor, or smelling salts to the nostrils, are useful remedies. If it is owing to loss of blood, and the recovery of the patient is protracted, the same treatment may be pursued which is recommended for suspended animation. (2356, *et seq.*)

2718. Fits or Convulsions. These, like flooding, may occur before, or after labor. They resemble those of epilepsy, and are sometimes extremely violent. The eyes have a glaring aspect, the mouth foams, the tongue is thrust out, the breathing is laborious, the skin becomes purple, and the countenance is frightfully distorted. The fits come on in paroxysms, the intervals between them varying from a few minutes to two or three hours. They are usually preceded by symptoms which indicate their approach, such as a determination of blood to the head, giddiness, ringing in the ears, headach, cramp or pain at the pit of the stomach, slow pulse, imperfect vision, or perhaps a total loss of sight. A paroxysm may last only a few minutes, or it may continue for a quarter or half an hour. When the patient recovers, she is wholly unconscious of what has passed, and is sometimes left in a stupid or insensible condition. Convulsions are frequently caused by eating indigestible food, and taking frequent draughts of cold water, or any other cold drink, while the general system is in a weak or feeble condition.

2719. *Treatment.* The treatment to be pursued in convulsions, has already been detailed under that head, in the alphabetical list of diseases, to which the reader is referred. (1888,

et seq.) I may add, that if symptoms indicating a paroxysm are observed, the attack may be prevented by taking an emetic of lobelia, or if necessary, a full course of medicine.

TYING AND CUTTING THE NAVEL STRING.

2720. "Perhaps the changes," says Dr. Denman, "which take place in the body of the child, immediately after its birth, are not perfectly understood at this time. We know, however, if the child is in a healthy state, that it usually cries lustily and continually when the air rushes into its lungs, which are thereby expanded. This cry, which does not seem to be occasioned by pain, but surprise, is in its consequences extremely important, as it is the cause of an exertion of all the powers of the child, and enables it to acquire a new manner of living, inconsistent with, and very different from, that which it possessed before it was born. But the change from uterine life, as it may be called, to breathing life, is not instantaneous, but gradual; and the uterine life continues till the breathing life is perfected, as is proved by the continuance of the circulation between the child and the placenta for some time after it has cried. As the breathing life becomes perfected, the uterine life gradually declines, and the manner of its declension may be proved by attending to the pulsation of the navel string, which first ceases at the part nearest the placenta, and then, by slow degrees, nearer and nearer to the child, till at length it entirely ceases; so that the whole of the circulating blood ultimately resides in the body of the child; and the navel string, which was before turgid, becomes quite flaccid. It seems reasonable to believe, that the continuance of uterine life after the birth of the child was designed for its preservation from the accidents of its state at that time, should the acquisition of its breathing life be by any course retarded or hindered. If, then, the practice of tying or dividing the navel string the instant the child is born be followed, though it were before vigorous, it will in some cases immediately decline, and never acquiring its perfect breathing life, may in a short time die; or if the child were in a feeble or dubious state, possessing only that life which it had during its residence in the uterus, as by tying and dividing the navel string that life is destroyed before the breathing life is acquired, it must inevitably perish. We may therefore safely conclude, that the navel string of a new-born infant ought not to be tied or divided till the circulation in it has ceased spontaneously; nor would the child suffer, though the cord was never tied, if it was not divided."

2721. The pulsation in the navel string usually ceases in ten

or fifteen minutes, when it is to be tied with two ligatures, one of which is to be placed an inch and a half from the body of the child, and the other about three inches, severing or cutting the cord midway between the ligatures with a pair of sharp scissors. The child is then to be given to the nurse to be washed and dressed. Denman says, "It was formerly the custom to divide the umbilical cord under the bedclothes; but having once known a very deplorable accident from this cause, I make it a general rule decently to withdraw the child, that I may have an opportunity of seeing how I perform the operation." With regard to the ligatures, they may consist of eight or ten strands of thread, or sewing silk, and the one nearest the child should be drawn tolerably tight, to prevent accidental hemorrhage. Nevertheless, this has been known to occur, from shrinking of the cord, and then a new ligature must be applied, or the old one tightened. I will add, that when the ligature is applied in the first instance, care should be taken not to include the intestines, for they sometimes protrude into the cord, constituting a hernia, and the ligature, if suffered to remain, may produce fatal consequences.

TWINS.

2722. It is estimated that twins occur once in about every hundred labors; and in a very few instances, a woman gives birth to three, four, or even five children. If, after delivery has taken place, the abdomen still continues hard, and nearly of its usual size, we generally conclude that there is another child; but on the other hand, if the abdomen is soft or flaccid, excepting, perhaps, just above the pubis, where the hard, contracted womb may be felt, we infer that there is nothing to be expelled but the placenta or afterbirth.

2723. In the event of twins, we are to superintend the delivery of the second child, precisely as though the first had not been born, leaving it to be expelled by the natural efforts, and making use of composition, enemas, emetics, and the vapor bath, as they may be needed, to prevent flooding, fainting, convulsions, and all other alarming symptoms. Dr. Gooch says, "I have compared notes with those who make it a rule to extract the second child immediately after the birth of the first, and I find that they are often embarrassed by irregular contraction of the womb and hemorrhage; neither of which will happen if the womb is left to expel every part of the child. With respect to the position of the second child, if the presentation is not natural, the same mode of treatment will be required as if there were only one."

2724. The placenta is not to be disturbed after the birth of the first child, for it will not interfere with the delivery of the second; and any attempt to remove it may endanger the life of the mother by hemorrhage.

MANAGEMENT OF THE CHILD.

2725. As soon as the infant is born, its mouth is to be cleansed from the mucus or slime with which it is often obstructed, so that the air may have free access to its lungs. Many children may be saved, says Dr. Dewees, by a proper attention to this circumstance. If the mucus is very thick or tenacious, it may be withdrawn by means of a fine dry rag, introducing it into the back part of the mouth with the finger.

2726. The body of the infant also, is sometimes covered with a slimy substance, which cannot be more effectually removed than by rubbing a little sweet oil or butter over the surface, and washing it with warm water and Castile soap until it is perfectly clean.

2727. The proper manner of dressing a new-born child, is probably too familiar with every nurse to require any directions from me. Its clothes must be in proportion to the season, and sufficiently loose to allow of a free circulation of blood in every part of the body. It should not be wrapped up so as to smother it, nor should the clothes be insufficient to keep it warm and comfortable. Many a child has perished from the carelessness of the nurse in allowing it to become chilled.

2728. Pure air is very important, not only to the child, but the mother. Hence the necessity of occasionally ventilating the room which they occupy. An infant frequently dwindles away in consequence of a vitiated atmosphere, without the cause of the difficulty being suspected. About fifty years ago, according to the Philadelphia Journal of Health, 2944 infants out of 7650 died within a fortnight after their birth, in the Lying-in Hospital at Dublin, in consequence of an insufficiency of pure air. A majority of them expired in convulsions, and in many instances the jaws were locked, and the face livid and bloated. The rooms were ultimately enlarged and more fully ventilated, and the mortality diminished in the proportion of one to three.

2729. It is recommended not to admit a strong light to the face of an infant, lest it should acquire the habit of squinting.

2730. The sooner the child is put to the breast the better, even though it should be within an hour after its birth; for this will excite the secretion of milk, and lessen the danger of sore nipples, and other complaints of the breast. Besides, the first

milk of the mother seems to have been designed by nature to cleanse the bowels of the infant of the meconium or greenish matter which they contain at birth. If this substance remains an undue length of time, it causes irritation and disease. Nevertheless, it is improper to give castor oil, or any other purgative, with a view to its removal. If there is no evacuation from the bowels in the course of twenty four hours, an injection of raspberry tea, milk warm, may be administered with a small syringe. A tea-cup one third full will be sufficient, and if necessary, the injection may be repeated. An occasional tea-spoonful of poplar bark tea, sweetened, may be given by the mouth, which will have a tendency to move the bowels in a gentle and natural manner.

2731. If there is a retention of urine, which occasionally happens, an infusion of cool wort, or of water melon seeds, may be given with advantage. A cloth wrung out of warm water, and laid over the abdomen, will often produce a discharge of urine.

2732. Raspberry tea, sweetened, with the addition of one third part milk, which has been previously boiled, may be given with benefit to infants soon after their birth. It improves the health, and appears to counteract any tendency which there may be to sore mouth.

2733. In giving either medicine or food to an infant, however, it should be remembered that its stomach, at birth, is no larger than a hen's egg, and is therefore easily overloaded.

2734. If the child is in a diseased or morbid state, it should have an emetic of lobelia, and this may be given with the happiest effect, even though it is not a day old. The emetic may be prepared by steeping half a tea-spoonful of green lobelia, and a tea-spoonful of sugar, in one third of a tea-cupful of hot raspberry tea. The infusion, when of a proper temperature, may be given in the dose of a tea-spoonful, and repeated every fifteen minutes until it operates.

MANAGEMENT OF THE PLACENTA.

2735. Soon after the delivery of the child, the labor pains are renewed, and the placenta or afterbirth* is expelled. This usually takes place in fifteen or twenty minutes, and is rarely deferred beyond half an hour. If the pains are feeble, they may be quickened, in many instances, by grasping the abdomen, in the region of the womb, repeatedly in the hand, and if pains are induced, the womb will be felt beneath the hand contracting into a hard mass

* Called also *secundines*.

or tumor. The placenta, as a general thing, will then be expelled, together, in some cases, with a considerable quantity of blood, which has been retained in the womb, but this need not excite any alarm.

2736. Medical men not only injure or destroy their patients by forcing the delivery of the child, but also by violently extracting the placenta. They tear or rupture numerous blood-vessels, occasioning dangerous or fatal hemorrhage, and not unfrequently produce inversion of the womb, which is one of the most deplorable and melancholy accidents which could befal the unfortunate woman. Nay, they sometimes tear away the womb itself, under an impression that it is the afterbirth. A case of this kind occurred about two years ago in New York, in the person of a Mrs. Cozzens, who was attended in her labor by Dr. Septimus Hunter, a *regular bred, diplomatised physician.* After the birth of the child, which took place without any difficulty, he proceeded to extract the placenta by force, "pulling with both his hands," the woman in the meantime screaming in the greatest agony, and declaring that he "was tearing out her heart." After laboring diligently for nearly half an hour, he brought away what he termed a "*false conception*," but which in reality was the womb. The patient died several minutes before he had finished the brutal operation. It cannot be said, in extenuation, that he was ignorant of the practice of midwifery—at least, not more so than his professional brethren, generally—for he studied medicine with his father, who was an English surgeon of some eminence, went to London at the age of manhood, to practice in one of the hospitals, engaged after that in the practice of surgery, to which he devoted himself for four or five years, and then emigrated to New York, where he had been employed seven or eight years as a physician, previous to being called to the case of Mrs. Cozzens.

2737. Dr. Hunter was arrested and put upon trial for the murder of his patient. The jury brought in a verdict of "gross ignorance," but on being told by the Court that such a verdict was not a legal one, they returned a verdict of manslaughter in the fourth degree, strongly *recommending the prisoner to mercy.* He was then sentenced to one year's imprisonment in the penitentiary, without any fine being imposed. Thus it will be seen to what an extent our *juries* and *Courts of justice* are disposed to favor those who commit murder under the sanction of a *diploma.*

2738. Dr. Denman observes, that "the introduction of the hand into the womb for the purpose of bringing away a retained placenta, is often mentioned in writings and conversation as a slight thing; but I am persuaded that every person, who attends to

the consequences of the practice, will think it of importance, and that, if possible, it ought to be avoided."

2739. Professor Channing told his class, that some physicians, when hurried with business, would tear the placenta away, causing the patient, as he had often seen, a great deal of suffering and misery.

2740. An English writer on obstetrics forcibly observes, "When we have seen a child safely expelled by a process regulated by the greatest wisdom, there seems to be no reason why we should be apprehensive of error or inability in those powers for the separation or exclusion of the placenta, which is but an inferior or secondary part of the same process."

2741. No danger need be apprehended from retention of the placenta. A physician of Dublin, whose name I now forget, published the report of a case in which the placentas of twins remained undelivered for six weeks, and then came away in a natural manner. Denman says, "I once saw an instance of a whole placenta retained till the *fifteenth day* after the birth of the child, and then expelled with little signs of putrefaction." Sometimes the placenta adheres so firmly to the womb as to prevent its separation, even by a great degree of force, but by waiting a few days, or perhaps a week, its detachment will take place without trouble or difficulty.

2742. The reason assigned by medical men for the removal of the placenta by force, is, that if suffered to remain beyond a certain time, it may occasion inflammation, flooding, convulsions, or some other dangerous or alarming symptom; but it is well known to every person sufficiently acquainted with the reformed practice, that these evils, which the diplomatised physician has so much reason to dread, may be prevented by appropriate treatment, always remembering, in doubtful or critical cases, to administer a thorough course of medicine.

2743. Stimulating injections (1567) per anum, by the indirect influence which they exercise over the womb, are of great value in bringing away a retained placenta. I have known a single injection to produce the desired effect in one or two minutes, even in very obstinate cases. Sometimes the placenta is low down in the vagina, and may be withdrawn by a gentle movement of the umbilical cord. Unless it is completely separated from the womb, however, and may be felt with the fingers within the vagina, it is hazardous to pull at the cord, particularly in the absence of a pain, for there is danger of inverting the womb, which, as I have said, is one of the most lamentable accidents that could befal the patient.

2744. Dr. Gooch says, "Do not separate the placenta from

its attachment to the uterus, but remove it with as little force as possible when already separated and almost expelled by the action of the uterus. By acting thus, you will in most cases prevent those perilous circumstances which may attend the separation of the afterbirth. But if you deviate from this rule, you hazard two principal dangers; one, the inversion of the uterus; the other, hemorrhage; either of which may terminate in death. On passing your finger up the vagina after the birth of the child, you may feel nothing but the bare cord; the placenta is then high up, and attached to the fundus uteri or top of the womb; if you now pull it away by force, you will leave the mouths of the vessels of that part of the uterus open, to which the placenta was attached, and a frightful hemorrhage will ensue; or you will invert the uterus. When the uterus is contracted you cannot invert it; but if it is flaccid and soft, it is as easily inverted as the finger of a glove; and if while in this state you extract the placenta with force, you may cause the death of the patient."

2745. If the health becomes impaired during the retention of the placenta, medicines are to be employed according to the circumstances of the case.

2746. If symptoms indicating internal hemorrhage should occur, (2715) active and energetic treatment must be adopted, administering a thorough course of medicine, and making free use of lobelia, cayenne, and enemas. The writer from whom I quoted in the preceding paragraph, says, "Not long since I was requested to attend at the examination of a female who had died soon after delivery. The labor appeared to have terminated favorably, and the accoucheur had left her. Soon afterwards she became pale and fainted. He was immediately sent for, but just as he arrived she expired. There was no external discharge of blood; he knew not to what so fatal a change could be imputed. As soon as we entered the bed-room to make the examination, we perceived that the abdomen was much above the level of the body, and appeared as prominent as that of a woman seven months gone with child. The uterus, on exposure, was seen to be enormously distended; and though there was no external evidence of hemorrhage, on cutting into it we found a mass of coagulated blood, amounting to a gallon. The hemorrhage in this case occurred after the extraction of the placenta; but it most frequently happens when this body is lodged in the mouth of the uterus and upper part of the vagina, where it acts like a plug, by which the effused blood is confined within the cavity of the uterus."

2747. It occasionally happens that a portion of the placenta remains in the womb, giving rise, as soon as it begins to decompose, to offensive discharges; and in that case, injections per vagi-

nam should be used several times a day, to keep it perfectly clean. (2492.)

2748. In case of twins, both placentas are usually discharged together, after the birth of the second child.

MANAGEMENT OF THE MOTHER.

2749. It is not necessary to say much upon this subject, for every sensible woman who has made herself acquainted with the new practice, will know how to manage her own case. For a disordered stomach, she will take an emetic; for serious ill health, a course of medicine; for costiveness, an injection daily, or some other appropriate remedy; for loss of appetite, or imperfect digestion, a dose of poplar bark, spiced bitters, or some other tonic, before each meal; and for chilliness or shiverings, composition and the vapor bath.

2750. If there is soreness of the abdomen, back, or hips, the affected part may be rubbed with the volatile, or stimulating liniment, and a heated stone wrapped in a damp cloth applied.

2751. If the breasts are hard and painful, they may be treated according to the directions in paragraph 2576.

2752. *After pains*, as they are termed, may be either prevented or greatly mitigated by keeping the patient in a gentle perspiration for several hours after delivery. The stimulating tea may be used with great advantage for this purpose.

2753. Watery or greenish discharges frequently take place from the vagina for three or four days after the birth of the child, and in some instances they are not only offensive, but so acrid as to excoriate the skin with which they may come in contact. The difficulty may be obviated by injections per vaginam, which should be administered several times a day. (2492.)

2754. For a day or two after delivery, particularly if the digestive organs are in a weak or feeble condition, the patient should confine herself to liquid nourishment, such as the unbolted wheat meal gruel, or any similar preparation mentioned under the head of *food for the sick*. Solid aliment should be avoided, until the stomach has acquired sufficient tone to digest it without exciting unpleasant sensations in that organ. A lady of New York ate freely of a lobster six days after confinement, and though her health was tolerably good at the time, she was a corpse in less than three hours.

2755. It is a fact well worthy of notice, that fluid nourishment, such for example as mush and milk, will increase the secretion of milk much more rapidly than solid food. "If the woman

goes to bed taking a cold supper only," says a writer on the subject, "little or no milk will be secreted; but if she has taken a supper of two thirds milk and one third barley water, constituting what is called barley gruel, the milk will spout from the breasts during the night. If, therefore, the secretion of milk is slow and scanty, give her sufficient fluid nourishment."

2756. As soon as the patient begins to make use of solid food, the wheat jelly, or unbolted wheat bread, should constitute a part of her diet, as this will serve to regulate the bowels. (1898).

2757. The patient should beware of blood-letting and the use of purgatives, for they very soon diminish the secretion of milk. Let a woman be purged briskly every other day, and it will not be long before her breasts are almost emptied of milk. This fluid, also, which nature no doubt intended for the exclusive nourishment of the child, is rendered impure or unwholesome by poisonous drugs. It is well known that an infant may be salivated, by putting the mother under the influence of mercury during the nursing period. Disease also has an influence upon the milk, as medical authors have abundantly proved. Dr. Eberle, in his work on the Nourishment of Infants, says, "It is manifestly the design of nature, that the infant should draw its food from the mother's breasts; it is reasonable to presume that this design cannot be contravened, without subjecting both mother and infant to an increased liability to injurious consequences. It can scarcely be doubted that the mother's milk is, in general, better adapted to the constitutional temperament of her offspring, than that furnished by others. Besides, when the suckling of the infant is submitted to a nurse, it is liable to various sources of injury and disorder which are in a great degree, if not entirely obviated, when this important duty is performed by the mother. * * * The child, also, runs much more risk of receiving bad and unwholesome milk, when suckled by a hired nurse, than when the office is performed by the mother herself. I have known several instances of most serious injury inflicted on the child's health and constitution in this way. That syphilis may be, and has been communicated through the milk of the nurse, I have not the smallest doubt; and the communication of other loathsome diseases by nurses to their nursling, such as itch, and tetter, is by no means uncommon. But even where no specific disease of the kind is contracted, the general health and constitution are often permanently injured by the unwholesome or uncongenial character of the milk furnished by the nurse. When the milk of the nurse is of a bad quality, it usually produces very obvious disturbance in the digestive organs of the infant. The stomach and bowels become weak and irri-

table. The child vomits frequently, or is harrassed by painful and watery diarrhœa. It becomes restless, fretful, and peevish; its flesh wastes and becomes flabby; its countenance assumes a distressed, pale, sickly aspect; its sleep is disturbed by sudden starts; it often cries out suddenly, as if in violent pain; and in most instances, fatal irritation, and effusion in the brain, finally ensue, and terminate the infant's sufferings."

STILL-BORN CHILD.

2758. When a child is still-born, the first thing to be done is to introduce a dry rag into the back part of its mouth, (2725) and remove any slime or collection of matter with which it may be blocked up, so that the air may pass freely into its lungs.

2759. Applying vinegar, camphor, or smelling salts to the nostrils of the infant; slapping it gently on the buttocks and soles of the feet with the open hand; or sprinkling it with a little cold water, and blowing strongly into its face, have each been recommended as a means of awakening the dormant powers of life.

2760. A tea-spoonful of weak composition tea may be poured down its throat, and three or four table-spoonfuls of the same administered by injection, with a small syringe adapted to the purpose. Raspberry tea, milk warm, with five or six drops of the antispasmodic tincture, makes a very good injection; and by repeating it several times, and wrapping the child in warm flannels, life may be ultimately restored. The particular advantage of injections, is, that the impression which they make upon the bowels, may be communicated through the nerves to the heart, and thereby rouse this organ into action.

2761. When the placenta comes away with the child, it has sometimes been the practice to place the former upon embers, and as it became heated, to strip the umbilical cord towards the body of the child, until it was supplied with a sufficient degree of heat to expand its lungs. Dr. Thomson mentions a case of this kind, in his Guide, in which he leaves his readers to infer that he was the original discoverer of this mode of pratice, but like many other of his *reputed* discoveries, it was known long before he was born. Dr. Denman says, "It seems to have been a practice with the ancients, to wait for a certain time after the birth of the child for the exclusion of the placenta, before the navel string was tied or divided; and if the child was born apparently dead, or in a very feeble state, the placenta, when expelled, was laid upon its belly, as a restoring or comforting application. When the child revived but slowly, or when the signs of life

declined, it became a custom to lay the placenta on hot embers, or to immerse it in hot wine; and the heat thereby conveyed was supposed to stimulate the weak or decaying powers of life to more vigorous action."*

2762. If the skin is pale and cold, the child should be wrapped in warm cloths or flannels, so that it may not lose the little animal heat which it possesses, and rubbed briskly from head to foot with the hand. Injections should also be administered, as directed in a preceding paragraph. Immersing the child up to the neck in water about blood warm, has been tried in many instances with success. A still better mode of applying external heat, however, is to lay the infant upon a soft mattress, or pillow, cover it with a light quilt or flannel of sufficient dimensions, excepting its face, and place a heated stone wrapped in a damp cloth near the child, beneath this covering. The warmth which is thus generated, will rarify the surrounding atmosphere, and tend to recal the blood to the surface of the body. (See paragraph 2356.) The external heat must be increased gradually, or it may interfere with the success of the experiment.

2763. "When respiration is not commenced immediately on the birth of the child," says Dr. Gooch, "you must excite the action of the respiratory muscles, taking care in the meantime that the child's animal heat be not lost. These intentions are fulfilled by inflating the lungs, and by putting the child into a warm bath. During the first five minutes after its birth, the heat of the child is not likely to be much diminished, therefore first inflate the lungs. This may be done either by placing the mouth to that of the infant, and blowing into it, or by blowing through a tube, or by means of a small pair of bellows. If you attempt the inflation of the lungs through the mouth, you first stop both nostrils, and press the *thyroid cartilage*† gently back against the œsophagus, to prevent the passage of air into the stomach. If you employ the bellows, the proceeding is the same, with the exception that the pipe of the bellows is to be adapted to one nostril, while the other, as well as the mouth, is closed. The lungs are to be inflated slowly, and then press the chest, in order to expel the air. These operations are to be performed alternately, so as to imitate, as nearly as possible, the natural inspiration and expiration. If in three or four minutes the child does not exhibit the customary signs of animation, immerse it in a warm bath of ninety six degrees,

* The first edition of Denman's work, be it known, was published before Thomson ever wrote.

† This is a projection of the throat, and is known, in common language, as *Adam's apple*. It is more prominent in men than in women.

and go on stimulating the powers of respiration in the manner just described. In five or ten minutes the child will generally be restored by this proceeding; but if your exertions are not successful within this period, you must persevere for half an hour, or longer."

2764. I should not be disposed to use the bellows to inflate the lungs, as the introduction of cold air into these organs may render the experiment unsuccessful; but there does not appear to be the same objection to blowing through a tube with the mouth, for the breath of the operator possesses a certain degree of warmth.

2765. In attempting to recover a still-born child, we should not relax our efforts too soon, as infants are sometimes lost, which, by a little more perseverance, might be saved. A physician in London was endeavoring to restore a still-born child, and after a long and fruitless effort, gave up the task, and the child, wrapped in a flannel, was laid in a basket, and placed in a closet. In the evening he called to see the mother, and saw the nurse with a young child in her arms, which, he was surprised to hear, was the one which he had laid away so carefully as dead. The nurse told him that a noise was heard in the closet about an hour after he had left, and opening the closet door, she saw the child, greatly to her astonishment, kicking about in the flannel.†

DIFFICULT LABOR.

2766. The diplomatised physicians, in their works on midwifery, have divided labors into the "difficult," the "preternatural," the "anomalous or complex," and so on to the end of the chapter; but the difficulties which they encounter are no doubt principally owing to their own mismanagement. If a woman is taken in labor, they commence their operations by thrusting the hand into the vagina, and boring their fingers into the mouth of the womb; this produces local irritation, and sooner or later the whole system becomes affected. Fever, or inflammation is now developed, and as a *remedy* for this newly created disorder, the woman is purged, bled copiously, and dosed with a variety of poisons. In the course of the treatment, also, she is frequently stupified with narcotics. She becomes weak and exhausted, and her pains die away. The ergot or spurred rye (555, *et seq.*) is then given, which throws the womb into violent spasmodic action, threatening the organ with laceration, and causing the patient to

† London Practice of Midwifery.

scream in the agony of her pains. Professor Bigelow says, "It is impossible for a woman to rest, or sometimes even to breathe, under the influence of this potent drug." Professor Channing, in some remarks on the same subject, said, "We often fear the womb will be torn by the violence of the contractions which we ourselves have occasioned." The child, under these circumstances, is almost invariably killed; and if it is not expelled during the continuance of the pains which have been excited by the ergot, the womb becomes insensible to the effects of the poison, and the woman is told that she cannot be delivered without the aid of instruments. Force is then employed, or some horrid operation performed, and in too many instances she ultimately pays the forfeit of her life. Here, then, is the origin of "difficult" labors, and the wonder only is, considering the subject in all its bearings and ramifications, that they are not multiplied in a ten-fold degree.

2767. Denman lays down the principle, that "all the difficulties attending labor may be reduced to two kinds; first, those which arise from the imperfect action of the womb; second, those which are occasioned by the resistance made to that action when duly exerted." Now the principal difficulty is without doubt a feeble action of the uterus, and this is to be obviated by the use of medicines which will sustain and invigorate the patient, and not by the abstraction of blood, or the administration of poisons, which can have no other effect than to weaken or paralyze the constitutional powers. The womb acts with almost incredible power in time of labor, and if not injured by an officious examination, or weakened by maltreatment of the patient, will be found entirely adequate to the delivery of the child. Nay, we are told of instances in which the child has been expelled by its contractions several hours after the death of the mother. Professor Gallup mentions the case of a woman, in whom the action of the womb "expelled a full-grown child eight hours after she was laid away as dead."*

2768. A story is related by Dr. Channing, which proves that a woman, if left to herself, may often be delivered naturally, notwithstanding she has suffered the greatest agony at the hands of her medical attendants. "I was called," said he, "to a case of arm presentation, in the country. Three physicians had successively abandoned the woman, but the fourth, poor fellow! was still in attendance, and almost worn out. One of the physicians, as I was informed, had cut away the right shoulder; another the left shoulder; and a third had removed the collar bone. The woman expressed a wish not to be handled any further, and said

* Gallup's Institutes.

she was anxious to die. I found that the womb was quiet, because it had been *worn out*, and knew that after a sufficient interval of rest, it would begin to contract. This very soon took place, and in a short time after my arrival, the child was delivered."

2769. Another story of a similar character is related by Dr. Channing. "An old physician whose name I forget," said he, "used to speak in his conversation of a lady whom he had attended successfully in a number of labors; but at length she saw fit to engage the services of her nephew, a young physician, whom she was desirous of patronizing. When the time arrived for his attendance, he officiated to the best of his knowledge, but not succeeding as the lady desired, she despatched a messenger in great haste for her old physician. When he arrived, he found the young man with his coat off, his sleeves rolled up, and his hands bloody, holding in them a pair of forceps. The old gentleman told him very calmly to wash his hands, and put on his coat; that it was not best to *hurry* matters; and in a short time the woman had two or three brisk pains, and was delivered by the natural efforts."

2770. With regard to the mutilation of children *in utero*, there now appears to be a disposition to punish such atrocities. A man in France, whose arm had been cut off previous to his birth, instituted an action against the physician who performed the operation, claiming heavy damages, and succeeded in procuring a pension adequate to his support during life.

2771. Professor Dewees mentions the case of a woman, in whom the mouth of the womb could not be discovered by her physicians, and "it was agreed in consultation, that as *there was no outlet to the organ*, one should and must be made." Accordingly, a knife was plunged into the womb, and the child extracted through the orifice. The woman recovered from the wound, and was subsequently delivered *naturally*—a clear proof, says Dr. Dewees, *how unnecessarily the operation was performed!**

2772. Dr. Francis of New York records the case of a woman in that city, who was married when she was fourteen years old, and at the age of fifteen, or thereabouts, gave birth to a living child, weighing seven pounds, by the *natural pains*. There is nothing extraordinary in this however, excepting as a part of her general history. In the course of the following seven years, she became pregnant seven times, and with one exception, when she miscarried, was delivered by murderous instruments—three of her children having been *killed*. At her last delivery, she complained that some injury was done her; yet, notwithstanding, within little more than two years, she bore a healthy child by the natural pains;

* Dewees's Baudelocque.

and on the 28th of June, 1815, she was again delivered of a healthy, well formed infant, in a natural manner. "This woman," says Dr. Francis, "in her first and two last labors, bore healthy children of the common size, by the natural pains, a manifest proof of a well formed pelvis, and affording the *strongest presumption* that the same management might have conducted her with equal success through the labors of the intermediate period, during which, from causes not necessary to be assigned, *instruments were unnecessarily made use of in six successive births*, and THREE HUMAN BEINGS DESTROYED!"*

DISEASES SUBSEQUENT TO LABOR.

CHILDBED FEVER.†

2773. This malady usually makes its appearance four or five days after delivery, commencing with chilliness or shivering, succeeded by a hot skin, thirst, and other symptoms of fever. There is a fixed pain in the abdomen, with swelling and great tenderness on pressure, indicating a high degree of inflammation in the bowels. Sometimes the patient cannot even bear the weight of the bed-clothes on the abdomen. The inflammation may be confined to a small portion of the bowels only, or it may be extensive, involving the womb, and other adjacent parts. The tongue is mostly dry, and covered with a white, or brown coat. Short and hurried breathing, nausea, vomiting, anxious expression of countenance, and pains in the back, hip, and lower extremities, are common symptoms. The milk is altered in taste and appearance, and either diminished in quantity, or entirely dried up.

2774. Childbed fever is rarely to be met with in the reformed practice, but is both frequent and fatal in the ranks of the medical faculty. Indeed, they acknowledge that it often destroys two thirds of their lying-in patients; and Gooch says, "some years ago, at the Westminster Hospital, its ravages were such that they buried two in a coffin, in order to *conceal from the public as far as possible*, THE EXTENT OF THE MORTALITY!"

* Francis's Appendix to Denman. † Puerperal fever.

2775. The diplomatised physicians assert, that the disease is propagated by some contagious influence, and that "the infection may be carried from one patient to another on the clothes, notwithstanding a journey in the rough wind of six or eight miles." Gooch, who was a convert to this doctrine, acknowledged that he "kept a suit of clothes expressly for visiting his *contaminated* patients." A much better mode of obviating the difficulty, however, would be to treat childbed women as though they were human beings, avoiding the abstraction of blood, or the administration of poisons; and above all, never to interfere with the process of labor, either by thrusting the hand into the vagina, or womb; dragging away the child with instruments; or extracting the afterbirth by force. If Dr. Gooch, and his adherents, will adopt these precautions, they may rest assured that they will never have occasion to change their clothes when they visit a patient with this malady.

2776. TREATMENT. If the attack is slight, the bowels may be evacuated once or twice a day with injections; and composition tea administered sufficiently often to keep up a gentle perspiration, placing a bottle of hot water wrapped in a damp cloth at the feet. If the case is violent, a course of medicine will be required, and this is to be repeated as often as the unfavorable symptoms return. An injection once an hour between the courses, will be of essential service in counteracting the undue determination of blood to the bowels, and maintaining the equilibrium of the circulation. If the abdomen is painful and swollen, applications may be made to it as directed in paragraph 2095. As soon as the disease is subdued, the bitter or restorative medicines are to be employed.

SWELLED OR MILK LEG.*

2777. If the patient has neglected her health, or has been improperly treated during confinement, this complaint is liable to occur within a week or fortnight after delivery, commencing with a slight degree of swelling in the limb, some increase of heat, and general feverishness. In some instances the disease is ushered in by chilliness or shiverings. The swelling generally increases rapidly, so that in the course of twenty four hours, the entire limb from the toe to the groin, is greatly enlarged. It is of a white and polished appearance, painful on being moved, hard to

*Phlegmasia dolens.

the touch, and when pressed with the finger, leaves no indentation, as in the case of dropsy, and some other swellings. Improperly managed, the disease is apt to be protracted, the limb remaining in a stiff, weak, painful and somewhat swollen condition for months, and even years.

2778. TREATMENT. If the attack is violent, a course of medicine should be administered, repeating it according to the severity of the symptoms; and when the fever is entirely subdued, the patient is to be strengthened by the use of spiced bitters, or some other tonic, with an occasional dose of composition. If the bowels are costive, they should be evacuated once or twice a day with injections. The limb should be steamed for half an hour or an hour every night and morning, by means of the *hip bath*, (2493) or in any other convenient manner, and rubbed briskly afterwards with the stimulating liniment, or a mixture of vinegar and cayenne. (1521.) It is then to be swathed in flannels to keep it warm, and a bottle of hot water wrapped in a damp cloth placed at the foot. By this treatment, in addition to courses, provided they are necessary, the swelling will soon subside, and the patient recover her health.

2779. The disease is sometimes accompanied by an offensive discharge from the vagina, and in that case it should be cleansed with injections, which may consist of raspberry, bayberry, or witch hazel tea, adding half a tea-spoonful or more of rheumatic drops.

SORE NIPPLES.

2780. The nipples become extremely sore in some instances, and bleed whenever the child is applied to the breast. They are to be protected from the air, and washed after nursing with an infusion of some vegetable astringent, such as raspberry, witch hazel, sumach, or bayberry. An infusion of the latter, with an equal part of the tincture of balm of Gilead buds, (1039) is an excellent wash. A rag several times folded and spread over with meadow fern ointment, or moistened with the tincture of fir balsam, may be applied to the nipple with great advantage. While the child continues to nurse, however, there is more or less difficulty in effecting a cure, unless the woman should employ nipple shields. These are made of wood, glass, ivory, and metal, and are placed over the nipple so that the child may suck without doing it any further injury. Employed with judgment, they answer an excellent purpose. They may be purchased in any of the principal towns or cities.

SWELLED BREASTS.

2781. This complaint is produced by a variety of causes, such as exposure to cold, local injuries, pressure from tight clothes, and checking the flow of milk at too early a period. The breasts are exceedingly painful, and sometimes they feel rough or knotted. The little canals or ducts which convey the milk from different parts of the breast to the nipple, become obstructed, giving rise to inflammation, and if relief is not afforded, a tedious and painful abscess may form, accompanied by disorder of the general system.

2782. TREATMENT. The breasts should be relaxed and softened by the local application of vapor, two or three times a day, and emptied of their contents either by the child, or some female friend. They are also to be rubbed frequently with volatile liniment, or some similar preparation, as recommended in paragraph 2576, and covered with flannel to keep the skin moist. Composition may be taken to maintain a gentle perspiration, and if the bowels are costive, they are to be evacuated once or twice a day with injections. If there is much disorder of the general system, it will be necessary to cleanse the stomach with an emetic of lobelia, or to administer a full course of medicine.

2783. If an abscess forms, it is to be poulticed as though it were a boil, (1806, *et seq.*) until the matter is all discharged. If the abscess leaves a considerable cavity, and shows no disposition to heal, it is to be treated as directed in paragraph 2291.

INVERTED WOMB.

2784. This accident is generally caused by taking away the placenta or afterbirth by force, whereby the top or fundus of the womb is forced within its own cavity. It is a serious evil, and if not speedily remedied, may cause the death of the woman, or render her an object of disgust to herself and husband for life.

2785. If the womb is in a relaxed or feeble state, and does not contract after the delivery of the child, it may be inverted by pulling very slightly upon the umbilical cord. Hence, it would be a safer practice always to leave the placenta to be expelled by the uterus itself, unless it is low down in the vagina, and then it may be removed without any hazard to the patient. (2743, *et seq.*)

2786. There are different degrees of inversion. The top of the womb may be merely dipped into its own cavity, as it were ;

or it may descend through the neck and mouth of the organ, and protrude, in some instances, beyond the external parts of generation, forming a bag or tumor between the thighs. The accident is generally accompanied by profuse and continued flooding, with distressing pains, a sense of bearing down, and sometimes fainting, and convulsions.

2787. The womb should be restored to its proper situation with as little delay as possible, or it may become inflamed, and mortify. If this does not occur, however, and the womb continues inverted, it becomes the seat of a continued and highly offensive discharge, and the patient is also liable to copious hemorrhages.

2788. TREATMENT. There is not much difficulty in restoring the womb to its natural situation immediately after the inversion takes place, but if two or three hours are suffered to elapse, the operation becomes more difficult, and in a few days it is generally considered altogether impracticable. Dr. Denman has found it impossible to reduce the inversion even a few hours after the accident occurred. In performing the operation, the hand is to be passed into the vagina, previously smearing it with lard, or the mucilage of slippery elm, and the protruded portion returned in a slow and gentle manner. If the placenta is adherent to the womb, it should be returned also, leaving it to be expelled by the pains, for if it is detached, blood-vessels will be ruptured, and profuse hemorrhage will ensue. There is no danger of hemorrhage, however, so long as the whole surface of the placenta adheres to the womb. When the reduction is accomplished, the hand should not be withdrawn from the organ until it begins to contract, or there may be a repetition of the accident. If the womb is sore or inflamed, lobelia should be given in emetic doses, preceded by an injection per anum and the vapor bath, as in a course of medicine, and as soon as the system is relaxed, and the soreness abated, the womb is to be returned to its proper situation, as already directed.

2789. In a chronic or long standing case of inversion, the patient may pass through life comfortably by taking a course of medicine whenever her health is much impaired, and employing injections per vaginam, (2492) whenever there is an acrid or offensive discharge. Attention to diet, also, (1680, *et seq.*) will do much to strengthen and invigorate the constitutional powers.

DISEASES OF INFANTS.

DIRECTIONS FOR GIVING MEDICINE.*

2790. Some hints on this subject have already been given in speaking of the "management of the child" after delivery. Infants, I may remark, are to be treated on the same general principles as adults, though the rules for the administration of medicines require to be somewhat varied.

2791. Many of the complaints of children, such as worms, croup, whooping cough, and rickets, will not be mentioned in this part of the work, as they have already been described among the general diseases.

2792. *Application of Vapor.* Where the infant is young or helpless, it may be steamed very conveniently by laying it on a mattress, or pillow, covering it up to the neck with a thin quilt, and placing a heated stone wrapped in a damp or wet cloth near it beneath the quilt, taking care that the vapor thus generated is not too hot to be oppressive. Perspiration may be promoted by giving an occasional tea-spoonful of warm raspberry, or black birch tea, sweetened. If the infant has the appearance of being faint or languid, its face and breast should be wiped with a cloth or napkin wetted with cold water, or vinegar. If the child is three or four years old, it may be tied in a chair, and the bath administered as directed in paragraph 1586.

2793. *Injections.* These are equally as beneficial in the treatment of children as adults, and are to be administered with a small syringe adapted to the purpose. The quantity of fluid to be employed, is specified in paragraph 1566. They may consist of raspberry, black birch, catnip, or pennyroyal tea, and if the case requires it, each injection may contain from five to ten drops of the antispasmodic tincture, or an equal quantity of rheumatic drops.

2794. *Emetics.* These should never be withheld where the stomach is much disordered, or the health seriously impaired.

* These directions have reference to infants within the first or second year of their age. If they are older, the reader is referred to remarks on the "treatment of children," commencing on page 385.

The lobelia is to be prepared by steeping half a tea-spoonful or more of the powdered leaves in a third or half a tea-cupful of hot raspberry tea, straining the infusion, or pouring it carefully from the sediment, and adding sugar to render it more agreeable to the taste. A tea-spoonful of the liquid is to be given at a dose, and repeated every ten or fifteen minutes until it operates sufficiently. The infant should be wrapped in a light quilt or flannel, to shield it from the air, and keep it in a perspiration. After vomiting has commenced, it should have an occasional tea-spoonful of milk porridge, or an infusion of raspberry.

VOMITING OF MILK.

2795. This, perhaps, can scarcely be termed a disease, as it frequently takes place when the infant is apparently healthy. Nevertheless, if it seems to be dependent on a disordered state of the stomach, and the milk is ejected in coagulated masses, an infusion of raspberry leaves, poplar bark, or sumach berries, sweetened, may be given occasionally in the dose of a tea-spoonful. Sometimes the mother's milk does not agree with the infant, and when that is ascertained, it should be fed for a few days on weak milk porridge, or a preparation of slippery elm and milk, (1431) the latter of which is particularly beneficial. I have remarked that the stomach of an infant at birth, is no larger than a hen's egg, and it is therefore very easily overloaded. Mothers should be careful on this point, for overfeeding infants, or giving them improper food, is the principal cause of all their maladies.

SORE MOUTH.

2796. A tea of raspberry and poplar bark, equal parts, sweetened ; or weak composition tea, rendered palateable with milk and sugar, and administered several times a day, will generally effect a cure. If the stomach is much disordered, it is to be cleansed with an emetic of lobelia. The infant must not be overfed. The dust or powder of sumach berries, mixed with honey, and laid on the tongue so as to dissolve gradually, will have a good effect. If the mouth is filled with canker, it should be washed with a rag moistened with raspberry tea.

SORES BEHIND THE EARS.

2797. Infants are sometimes affected with sores behind the ears, which, if neglected, become very troublesome. They should

be washed clean every night and morning with warm soapsuds, followed by an infusion of some mild astringent, such as black birch bark, or sumach leaves, and an application made of the meadow fern ointment. If the scabs are hard, or the parts sore or irritable, poultices of slippery elm will be essential. If the bowels are costive, injections should be administered two or three times a day, and weak composition tea employed as a drink.

TEETHING.

2798. The child begins to cut its teeth in about six months after birth, and until this process is completed, it is liable to be attacked by a variety of symptoms, such as swollen and painful gums, driveling of saliva, feverishness, loss of appetite, restlessness, diarrhœa, and sometimes convulsions. If an occasional dose of composition is not sufficient to afford relief, it should have a course of medicine, commencing with an enema of pennyroyal, catnip, or composition tea, and followed by the vapor bath, (2791) and an emetic of lobelia. (2794.) If a tooth is unusually slow in making its way through the gum, producing great irritation and distress, relief may be obtained by cutting through the skin across the head of the tooth with a sharp penknife or lancet. The precaution must be used to cut entirely down upon the tooth, or the operation will not succeed. The pain lasts only for a moment, and is nothing in comparison with what the child might otherwise suffer.

2799. Scullcap tea is an excellent medicine for children whose health is impaired by the irritation of teething, particularly if they are restless, or unable to sleep.

ERUPTIONS OF THE SKIN.

2800. Where the skin becomes the seat of an eruption, the bowels should be regulated, and composition tea given to keep up a healthy action in the system. If the appetite is impaired, a tea of poplar bark may be administered. The child should be kept perfectly clean by washing it every morning with water and Castile soap. If the infant is very feeble, the water should be warm, but if its constitution is tolerably firm, and it has a sufficiency of animal heat, cold water will have a more invigorating effect.

DIARRHŒA, AND GRIPING PAINS.

2801. Diarrhœa is very often produced by improper food, which occasions flatulency, an acid stomach, griping pains in the

bowels, and greenish discharges by stool. If the disease is not arrested, the infant soon becomes extremely emaciated. Sometimes the discharges are so profuse and exhausting, that death takes place in forty eight hours from the commencement of the attack.

2802. There are a variety of remedies which may be used with advantage in this complaint, such as an infusion of raspberry leaves, black birch bark, golden rod, or composition. The dysentery sirup in the dose of a tea-spoonful, and repeated every hour or two, will generally arrest the discharges. Weak composition tea should be given by injection several times a day; and the same administered by the mouth, so as to keep the infant in a gentle perspiration, as this will counteract the undue determination of blood to the bowels.

2803. The griping pains are frequently allayed by giving four or five drops of the essence of spearmint, in a tea-spoonful of warm raspberry tea. This medicine will also serve to check the diarrhœa.

2804. If the case is obstinate, an emetic of lobelia should be given. (2794.)

2805. The vapor bath (2791) is a valuable remedy, and may be administered twice a day until the disease is checked. It has a soothing effect upon the nervous system, so much so, that the infant not unfrequently goes to sleep under its influence. It should never be dispensed with if the skin is cold, or the patient chilly.

2806. If the abdomen is swollen and tender, it should be rubbed with the stimulating liniment, or a weak solution of vinegar and cayenne, (1571) followed by an application of warm flannels.

2807. A decoction of the bark of fir balsam (1110) has cured the diarrhœa of infants when other remedies, upon which we are accustomed to rely, have failed. Rice coffee is also an excellent medicine. (1430.)

2808. The mother's milk is sometimes rendered impure or unwholesome by inattention to diet, or the use of deleterious drugs, and where that is the case, it is sometimes impossible to arrest the diarrhœa without taking the infant from the breast, and feeding it for a few days on milk porridge, or slippery elm and milk. (1431.)

2809. *Cholera infantum*, as it is termed, is only an aggravated form of diarrhœa, and requires the same treatment, excepting, perhaps, that it should be a little more active.

CONVULSIONS.

2810. These are often connected with other diseases, and not unfrequently arise during the irritation of teething. The stomach

and bowels are generally in a very disordered condition. An enema of bayberry tea, containing fifteen or twenty drops of the antispasmodic tincture, may be administered, and repeated every five or ten minutes until relief is obtained. The vapor bath will have an excellent effect in allaying the convulsive action of the body and limbs ; or if more convenient, the child may be immersed up to its chin in warm water. If the jaws are locked, five or ten drops of antispasmodic tincture, mixed with a little raspberry tea, should be poured into its mouth, if possible, and when the liquid comes in contact with the parts about the throat, the rigidity of the jaws will usually give way. When the convulsions subside, appropriate medicines are to be employed to restore the general health.

TONGUE-TIED CHILDREN.

2811. The tongue is sometimes tied down by a string or thin whitish membrane, which prevents the infant from protruding the tongue from its mouth, and interferes also with its nursing. The membrane should be divided with a pair of sharp scissors, taking care not to cut into the substance of the tongue, as there would be danger of hemorrhage. The operation is simple, but still it should be performed with care.

WATER IN THE SCROTUM.

2812. This is a collection of water in the bag containing the testicles, and in order to effect a cure, the parts should be rubbed two or three times a day with the volatile, or stimulating liniment. A bandage should also be applied so as to compress the scrotum slightly, which will favor the absorption of the fluid. If the health is impaired, it is to be reinstated by appropriate medicines. When the disease occurs in an adult, it is sometimes necessary to draw off the fluid by the operation of *tapping*, which can only be performed with safety by a surgeon who is acquainted with the anatomy of the parts. I need scarcely suggest, that this malady should not be confounded with *scrotal hernia*. (2247.)

THE END.

GLOSSARY.

The technical terms employed in the second volume of this work, are either referred to in the index, or explained in the following glossary.

ABDOMEN, the belly.
ACCOUCHEUR, one who assists women in childbirth.
ANUS, the fundament or extremity of the great intestine, through which the excrements or feces are discharged.

CATAMENIA, the monthly discharges from the womb.

DECOCTION, a medicine prepared by boiling.
DILATATION, the act of expanding or enlarging.
DIURETIC, a medicine which promotes the discharge of urine.

ENEMA, an injection.
ET SEQ., a contraction of the Latin words *et sequitur*, signifying that which follows.

FECES, the discharges by stool.
FŒTUS, the child in the womb.

GESTATION, pregnancy.

HEMORRHAGE, bleeding from any part of the body.

IN UTERO, in the womb.

LOINS, the small of the back.

LIQUOR AMNII, the water contained within the membranes which surround the child previous to birth.

MENSTRUAL, pertaining to the menses.

ŒSOPHAGUS, the gullet or meatpipe.
OS TINCÆ, the mouth of the womb.

PARTURITION, the act of bringing forth young.
PER ANUM, by the anus.
PER VAGINAM, by the vagina.

RECTUM, the lower part of the great intestine which terminates at the anus.
RETCHING, straining to vomit.
RIGOR, a sudden coldness, attended by shivering.

SEXUAL, pertaining to the sexes.
STUPOR, insensibility.
SYNCOPE, fainting.

TENESMUS, a painful desire to go to stool.

UMBILICAL CORD, the navel string.
UTERUS, the womb.

VERTEX, the crown of the head.

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ERRATA.

Page 5, seventh line from the bottom, vertebra should read vertebræ. The same error occurs in the fourth and fifth lines from the bottom of the same page.
Page 16, second line from the bottom, 62 should be 63.
Page 58, sixth line from the bottom, 192 should be 191.
Page 102, tenth line from the bottom, 396 should be 395.
Page 147, fifth line from the bottom, were should be was.
Page 151, twelfth line from the top, are should be is.
Page 160, fifth line from the bottom, 448 should be 648.
Page 161, ninth line from the top, 648 should be 649.
" " eighteenth line from the top, the number 649 is a duplicate.
Page 187, fifth line from the bottom, changed should be substituted for modified.
Page 200, third line from the top, dentrifice should read dentifrice.
Page 35, eighteenth line from the top, heaping should be heaped.
Page 434, eighth and ninth lines from the bottom, "to assume erect position," should read, to assume an erect position.
Page 440, twelfth line from the bottom, "without recalling the bile into," should read, without causing a flow of bile into, &c.
Page 478, eleventh line from the bottom, mysentery should read mesentery.

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